STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 16746

TO: Ralph J Gitomer **Location: 3d65 / 3c18** **Art Unit: 1655** **Monday, October 24, 2005** **Case Serial Number: 09/857433**	**From: Noble Jarrell** **Location: Biotech-Chem Library** **Rem 1B71** **Phone: 272-2556** **Noble.jarrell@uspto.gov**

Search Notes

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=> d his full

     (FILE 'HOME' ENTERED AT 12:09:22 ON 24 OCT 2005)

     FILE 'HCAPLUS' ENTERED AT 12:09:29 ON 24 OCT 2005
L1            1 SEA ABB=ON  PLU=ON  US2003040030/PN OR (US2002-857433# OR
                GB2000-8784# OR WO2001-GB1615#)/AP,PRN

     FILE 'REGISTRY' ENTERED AT 12:10:33 ON 24 OCT 2005

     FILE 'HCAPLUS' ENTERED AT 12:10:40 ON 24 OCT 2005
L2            TRA L1 1- RN :       19 TERMS

     FILE 'REGISTRY' ENTERED AT 12:10:40 ON 24 OCT 2005
L3           19 SEA ABB=ON  PLU=ON  L2

     FILE 'WPIX' ENTERED AT 12:10:42 ON 24 OCT 2005
L4            1 SEA ABB=ON  PLU=ON  US2003040030/PN OR (US2002-857433# OR
                GB2000-8784# OR WO2001-GB1615#)/AP,PRN

=> b hcap;d all l1
FILE 'HCAPLUS' ENTERED AT 12:11:40 ON 24 OCT 2005
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FILE COVERS 1907 - 24 Oct 2005  VOL 143 ISS 18
FILE LAST UPDATED: 23 Oct 2005  (20051023/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2001:763310  HCAPLUS
DN   135:300667
ED   Entered STN:  19 Oct 2001
TI   Homocysteine assay in a body fluid sample
IN   Connoly, Caroline; Brady, Jeff
PA   Axis-Shield ASA, UK
SO   PCT Int. Appl., 38 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  G01N033-48
CC   9-2 (Biochemical Methods)
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   WO 2001077670        A2    20011018    WO 2001-GB1615         20010410 <--
     WO 2001077670        A3    20020516
         W:  AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
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CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI,
FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM,
TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1272661 A2 20030108 EP 2001-919648 20010410 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
JP 2003530574 T2 20031014 JP 2001-574876 20010410 <--
US 2003040030 A1 20030227 US 2002-857433 20020305 <--
PRAI GB 2000-8784 A 20000410 <--
WO 2001-GB1615 W 20010410 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
WO 2001077670	ICM	G01N033-48	
WO 2001077670	ECLA	C12Q001/48	<--
US 2003040030	NCL	435/025.000	
	ECLA	C12Q001/48	<--

AB The present invention provides an improved method of assessing/quantifying the amount of homocysteine in a body fluid sample via an enzymic assay which comprises reducing background signal by treatment with one of the following: a reducing agent, a pyruvate deactivating agent, heat treatment, or by lyophilizing or immobilizing the homocysteine converting enzyme.

ST homocysteine assay body fluid

IT Reaction
(Cycling; homocysteine assay in a body fluid sample)

IT Filters
(Exclusion; homocysteine assay in a body fluid sample)

IT Enzymes, uses
RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process); USES (Uses)
(Homocysteine converting; homocysteine assay in a body fluid sample)

IT Thiols (organic), biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(dithiols, binding agent; homocysteine assay in a body fluid sample)

IT Immobilization, biochemical
(enzyme; homocysteine assay in a body fluid sample)

IT Blood
Body fluid
Centrifugation
Concentration (condition)
Cryoprotectants
Erythrocyte
Filters
Filtration
Freeze drying
Heat treatment
Heating
Liquids
Molecular sieves
Neutralization
Oxidation
Reducing agents
Stabilizing agents
Standard substances, analytical
Sulfhydryl group
Test kits
(homocysteine assay in a body fluid sample)

IT Enzymes, uses
Reagents

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homocysteine assay in a body fluid sample)
IT Proteins, general, analysis
RL: ARU (Analytical role, unclassified); NUU (Other use, unclassified); ANST (Analytical study); USES (Uses)
(homocysteine assay in a body fluid sample)
IT Thiols (organic), biological studies
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(homocysteine assay in a body fluid sample)
IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(immobilized; homocysteine assay in a body fluid sample)
IT Disulfides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(organic; homocysteine assay in a body fluid sample)
IT 6027-13-0, Homocysteine
RL: ANT (Analyte); ANST (Analytical study)
(homocysteine assay in a body fluid sample)
IT 53-84-9, NAD 58-68-4, NADH 74-88-4, Methyl iodide, uses 302-01-2, Hydrazine, uses 541-59-3, Maleimide 3483-12-3, Dithiothreitol 5961-85-3, Triscarboxyethylphosphine 6892-68-8, Dithioerythritol 9001-05-2, Catalase 9001-60-9, Lactate dehydrogenase 9001-96-1, Pyruvate oxidase. 9014-19-1, Pyruvate carboxylase. 9014-20-4, Pyruvate dehydrogenase 9024-41-3, Homocysteine desulfurase 9025-03-0, Acetoacetate decarboxylase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homocysteine assay in a body fluid sample)
IT 7722-84-1, Hydrogen peroxide, reactions
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(homocysteine assay in a body fluid sample)
IT 462-10-2, Homocystine
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(homocysteine assay in a body fluid sample)
IT 127-17-3, Pyruvic acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(homocysteine assay in a body fluid sample)

=> b wpix

FILE 'WPIX' ENTERED AT 12:11:44 ON 24 OCT 2005
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FILE LAST UPDATED: 19 OCT 2005 <20051019/UP>
MOST RECENT DERWENT UPDATE: 200567 <200567/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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'BIX BI,ABEX' IS DEFAULT SEARCH FIELD FOR 'WPIX' FILE

=> d all l4 tot

L4 ANSWER 1 OF 1 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2001-657186 [75] WPIX
DNN N2001-489848 DNC C2001-193400
TI Assay for determining the homocysteine levels in patients involves contacting a sample with an agent, which binds, oxidizes or depotentiates a reducing agent after being contacted with homocysteine desulfurase.
DC B04 B05 S03
IN BRADY, J; CONNOLY, C; CONNELLY, C
PA (AXIS-N) AXIS SHIELD PLC; (BRAD-I) BRADY J; (CONN-I) CONNELLY C
CYC 96
PI WO 2001077670 A2 20011018 (200175)* EN 38 G01N033-48
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001046709 A 20011023 (200213) G01N033-48
EP 1272661 A2 20030108 (200311) EN C12Q001-527
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 2003040030 A1 20030227 (200318) C12Q001-26 <--
JP 2003530574 W 20031014 (200368) 43 G01N033-68
ADT WO 2001077670 A2 **WO 2001-GB1615 20010410**; AU 2001046709 A AU 2001-46709 20010410; EP 1272661 A2 EP 2001-919648 20010410, **WO 2001-GB1615 20010410**; US 2003040030 A1 **WO 2001-GB1615 20010410, US 2002-857433 20020305**; JP 2003530574 W JP 2001-574876 20010410, **WO 2001-GB1615 20010410**
FDT AU 2001046709 A Based on WO 2001077670; EP 1272661 A2 Based on WO 2001077670; JP 2003530574 W Based on WO 2001077670
PRAI **GB 2000-8784 20000410**
IC ICM C12Q001-26; C12Q001-527; G01N033-48; G01N033-68
ICS G01N021-78
AB WO 200177670 A UPAB: 20011220
NOVELTY - An assay for homocysteine involves contacting a biological fluid sample (1) with a reducing agent (2) and subsequently with homocysteine desulfurase (3). The sample is contacted with an agent (4) which binds, oxidizes or depotentiates (2) after being contacted with (3).
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a kit for a homocysteine assay comprising
(1) homocysteine desulfurase (3) preferably (i) in lyophilized form; the lyophilisate being substantially free of thiol-containing cryo/lyoprotectants or (ii) in aqueous liquid form further containing a dithiol reducing agent (e.g. DTT (dithiothreitol), DTE (dithioerythrol), or TCEP (triscarboxyethylphosphine)) and a proteinaceous or non-proteinaceous stabilizer);
(2) a homocyst(e)ine standard (preferably several standards containing homocysteine (Hcy) or homocystine at several concentrations);
(3) reducing agent (2) (e.g. DTT, dithioerythiol, TCEP or methyl iodide); and
(4) an agent (4) which binds, oxidizes or depotentiates (2) e.g. an organic disulfide or a dithiol binding agent (preferably maleimide);
optionally at least one further reagent capable of converting the homocysteine conversion product of (3) into a detectable analyte; preferably a pyruvate deactivating agent e.g. hydrazine, acetoacetate decarboxylase, pyruvate carboxylase, hydrogen peroxide or pyruvate dehydrogenase; optionally a filter for removing pyruvate i.e. a molecular sieve; or capable of removing red blood cells from blood.
USE - For determining homocysteine levels in patients correlated to

risk of cardiovascular disease e.g. coronary heart disease, coronary artery disease, cerebrovascular disease, or peripherial vascular disorders.

Human blood was collected into vacutainer tubes containing citrate. Plasma was separated from the cells upon centrifugation at 1000 g for 10 minutes at 2 - 8 deg. C. Sample (10 micro l) was mixed with 0.47% hydrogen peroxide (10 micro l) and incubated at room temperature for 3 minutes. Enzyme reagent 1 (containing homocysteine desulfurase (0.02 U/ml), lactate dehydrogenase (20.8 micro g/ml), nicotinamide adenine dinucleotide (NADH) (50 micro M), cryo/lyoprotectant (trehalose, gelatine, maltose, dextran, mannitol, tween 20 or caseine) (0.8 wt,%), phosphate buffer (pH 8) (0.1 M), catalase (300 U/ml)) (25 micro l) was added and incubated for 30 minutes at 37 deg. C. 10 micro l of the same sample was mixed with 0.47% hydrogen peroxide and incubated at room temperature for 3 minutes. Blank reagent 1 was added and incubated for 30 minutes at 37 deg. C. Following this incubation reagent 2 was added to each and after mixing they were incubated for further 3 minutes at room temperature. Reagent 2 contained the DTT (dithiothreitol) binding agent and the acid destroyed the excess NADH. A reagent 3 was added and incubated at 37 deg. C for 15 minutes. The reaction was stopped by the addition of 6M HCl (15 micro l) and the sample was read at 550 nm. The reading obtained for the sample treated with blank reagent 1 was subtracted from the reading for the sample treated with enzyme reagent 1. The pretreatment of samples with hydrogen peroxide and the absence of catalase in reagent 1 for one set of samples were used as control.

The samples were assayed in the presence and absence of H2O2/catalase. The reduction in background had improved the precision of the assay by decreasing the % CV (coefficient or variance). The results demonstrated that the background was reduced when samples were assayed in the presence of hydrogen peroxide and catalase.

ADVANTAGE - The assay reduces the background levels, i.e. the signal generated by performance of the assay in the absence of the homocysteine conversion enzyme. The improved assay determines the homocysteine levels in patients.

Dwg.0/3

FS CPI EPI
FA AB; DCN
MC CPI: B04-L01; B05-C08; B10-B02D; B11-C08E3; B12-K04A2
EPI: S03-E14H

=> b home
FILE 'HOME' ENTERED AT 12:11:50 ON 24 OCT 2005

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DICTIONARY FILE UPDATES:  23 OCT 2005  HIGHEST RN 865836-54-0

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**********************************************************************
*                                                                    *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                                    *
**********************************************************************

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http://www.cas.org/ONLINE/UG/regprops.html

=> d ide l10 tot

L10  ANSWER 1 OF 26  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   849630-00-8  REGISTRY
ED   Entered STN:  02 May 2005
CN   Homocysteine-1-13C (9CI)  (CA INDEX NAME)
FS   3D CONCORD
MF   C4 H9 N O2 S
SR   CA
LC   STN Files:   CA, CAPLUS, TOXCENTER
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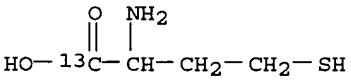

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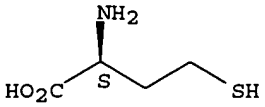
                1 REFERENCES IN FILE CA (1907 TO DATE)
                1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10  ANSWER 2 OF 26  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   756484-33-0  REGISTRY
ED   Entered STN:  04 Oct 2004
CN   L-Homocysteine, trifluoroacetate (9CI)  (CA INDEX NAME)
FS   STEREOSEARCH
MF   C4 H9 N O2 S . C2 H F3 O2
SR   CA
LC   STN Files:   CA, CAPLUS, CASREACT
```

CM 1

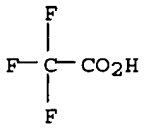
CRN 6027-13-0
CMF C4 H9 N O2 S

Absolute stereochemistry.



CM 2

CRN 76-05-1
CMF C2 H F3 O2

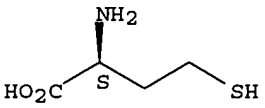


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 3 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 454679-15-3 REGISTRY
ED Entered STN: 25 Sep 2002
CN **L-Homocysteine, monohydrate (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S . H2 O**
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
CRN (6027-13-0)

Absolute stereochemistry.



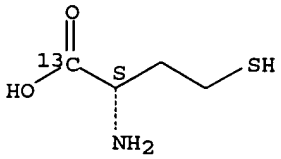
● H_2O

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 4 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 249509-57-7 REGISTRY
ED Entered STN: 30 Nov 1999
CN **L-Homocysteine-1-13C (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S**

SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.



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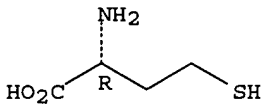
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

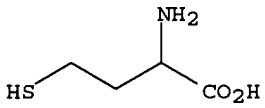
L10 ANSWER 5 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 221040-52-4 REGISTRY
ED Entered STN: 08 Apr 1999
CN **D-Homocysteine, hydrochloride (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S . Cl H**
SR CA
LC STN Files: CA, CAPLUS
CRN (6027-14-1)

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 6 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 160568-38-7 REGISTRY
ED Entered STN: 02 Feb 1995
CN **Homocysteine, labeled with deuterium (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **DL-Homocysteine, labeled with deuterium**
MF **C4 H9 N O2 S**
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
IL XH-2

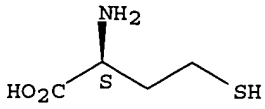


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 7 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 146764-55-8 REGISTRY
ED Entered STN: 02 Apr 1993

CN **L-Homocysteine, labeled with deuterium (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S**
SR CA
LC STN Files: CA, CAPLUS
IL XH-2

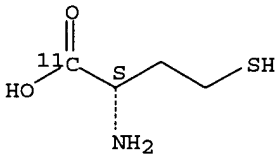
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 8 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 122665-63-8 REGISTRY
ED Entered STN: 15 Sep 1989
CN **L-Homocysteine-1-11C (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S**
SR CA
LC STN Files: CA, CAPLUS

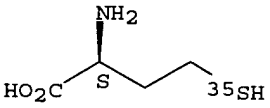
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 9 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 106647-41-0 REGISTRY
ED Entered STN: 14 Feb 1987
CN **L-Homocysteine-35S (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S**
SR CA
LC STN Files: CA, CAPLUS, CASREACT

Absolute stereochemistry.

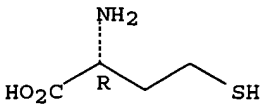


2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 10 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 88945-99-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN **D-Homocysteine, monosodium salt (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S . Na**

LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT
(*File contains numerically searchable property data)
CRN (6027-14-1)

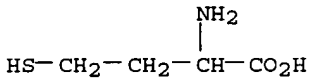
Absolute stereochemistry.



● Na

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 11 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 85712-14-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN **Homocysteine, disodium salt (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **DL-Homocysteine, disodium salt**
MF **C4 H9 N O2 S . 2 Na**
SR European Union (EU)
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMLIST, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (454-29-5)

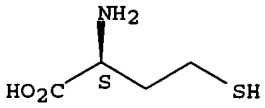


●2 Na

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 12 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 82695-92-9 REGISTRY
ED Entered STN: 16 Nov 1984
CN **L-Homocysteine, monosodium salt (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
DR 110880-48-3
MF **C4 H9 N O2 S . Na**
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT
(*File contains numerically searchable property data)
CRN (6027-13-0)

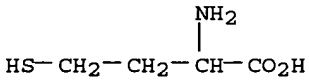
Absolute stereochemistry.



● Na

5 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 13 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 73823-57-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN **Homocysteine, monoammonium salt (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **DL-Homocysteine, monoammonium salt**
MF **C4 H9 N O2 S . H3 N**
LC STN Files: CA, CAPLUS
CRN (454-29-5)

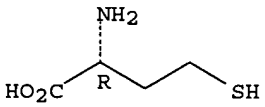


● NH_3

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 14 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 73823-56-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN **D-Homocysteine, monoammonium salt (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S . H3 N**
LC STN Files: CA, CAPLUS
CRN (6027-14-1)

Absolute stereochemistry.



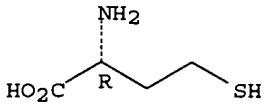
● NH_3

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 15 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 73292-25-8 REGISTRY

ED Entered STN: 16 Nov 1984
CN **D-Homocysteine, sodium salt (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S . x Na**
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)
CRN (6027-14-1)

Absolute stereochemistry.

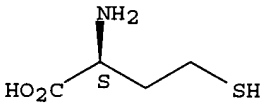


●x Na

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 16 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 73292-23-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN **L-Homocysteine, sodium salt (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S . x Na**
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
CRN (6027-13-0)

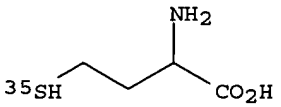
Absolute stereochemistry.



●x Na

9 REFERENCES IN FILE CA (1907 TO DATE)
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)

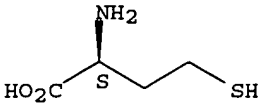
L10 ANSWER 17 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 60343-88-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN **Homocysteine-35S (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **DL-Homocysteine-35S**
MF **C4 H9 N O2 S**
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 18 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 50615-55-9 REGISTRY
ED Entered STN: 16 Nov 1984
CN **L-Homocysteine, disodium salt (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S . 2 Na**
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT
(*File contains numerically searchable property data)
CRN (6027-13-0)

Absolute stereochemistry.

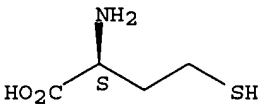


● 2 Na

10 REFERENCES IN FILE CA (1907 TO DATE)
10 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 19 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 35605-88-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN **L-Homocysteine, hydriodide (9CI)** (CA INDEX NAME)
FS STEREOSEARCH
MF **C4 H9 N O2 S . H I**
LC STN Files: CA, CAPLUS
CRN (6027-13-0)

Absolute stereochemistry.

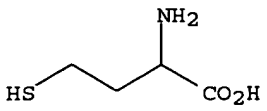


● HI

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 20 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 28223-71-4 REGISTRY
ED Entered STN: 16 Nov 1984
CN **Homocysteine, monosodium salt (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butyric acid, 2-amino-4-mercapto-, monosodium salt, DL- (8CI)
CN **DL-Homocysteine, monosodium salt**
OTHER NAMES:
CN DL-Homocysteate sodium
MF **C4 H9 N O2 S . Na**
LC STN Files: BEILSTEIN*, CA, CAPLUS, TOXCENTER

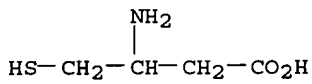
(*File contains numerically searchable property data)
CRN (454-29-5)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

9 REFERENCES IN FILE CA (1907 TO DATE)
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 21 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 21100-02-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN Butanoic acid, 3-amino-4-mercapto- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butyric acid, 3-amino-4-mercapto- (8CI)
OTHER NAMES:
CN **β-Homocysteine**
FS 3D CONCORD
MF **C4 H9 N O2 S**
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAPLUS, CASREACT, TOXCENTER
(*File contains numerically searchable property data)

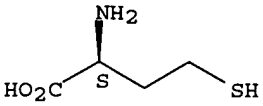


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

6 REFERENCES IN FILE CA (1907 TO DATE)
6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 22 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 20244-20-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN **L-Homocysteine, hydrochloride (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butyric acid, 2-amino-4-mercapto-, hydrochloride (8CI)
FS STEREOSEARCH
MF **C4 H9 N O2 S . Cl H**
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)
CRN (6027-13-0)

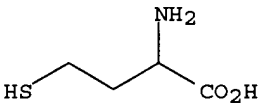
Absolute stereochemistry.



● HCl

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 23 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 18265-50-4 REGISTRY
ED Entered STN: 16 Nov 1984
CN **Homocysteine, hydrochloride (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butyric acid, 2-amino-4-mercapto-, hydrochloride, DL- (8CI)
CN **DL-Homocysteine, hydrochloride**
OTHER NAMES:
CN **D,L-Homocysteine hydrochloride**
MF **C4 H9 N O2 S . Cl H**
LC STN Files: BEILSTEIN*, CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
CRN (454-29-5)

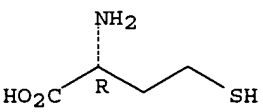


● HCl

6 REFERENCES IN FILE CA (1907 TO DATE)
6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 24 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 6027-14-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN **D-Homocysteine (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butyric acid, 2-amino-4-mercapto-, D- (8CI)
FS STEREOSEARCH
MF **C4 H9 N O2 S**
CI COM
LC STN Files: BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMINFORMRX, GMELIN*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.

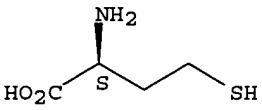


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

40 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
40 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 25 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 6027-13-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN **L-Homocysteine (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butyric acid, 2-amino-4-mercapto-, L- (8CI)
OTHER NAMES:
CN (S)-2-Amino-4-mercaptobutanoic acid
CN **(S)-Homocysteine**
CN 2-Amino-4-mercapto-L-butyric acid
CN 2-Amino-4-mercaptobutyric acid
CN Butanoic acid, 2-amino-4-mercapto-, (S)-
CN **Homocysteine**
CN NSC 43117
FS STEREOSEARCH
DR 454-28-4, 1867-00-1
MF **C4 H9 N O2 S**
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DIOGENES, DRUGU, EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, PIRA, PROMT, RTECS*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.

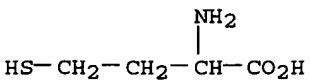


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5892 REFERENCES IN FILE CA (1907 TO DATE)
104 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5900 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L10 ANSWER 26 OF 26 REGISTRY COPYRIGHT 2005 ACS on STN
RN 454-29-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN **Homocysteine (9CI)** (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Butyric acid, 2-amino-4-mercapto-, DL- (8CI)
CN **DL-Homocysteine**
OTHER NAMES:
CN **(±)-Homocysteine**
CN NSC 206252
FS 3D CONCORD
DR 115154-46-6
MF **C4 H9 N O2 S**
CI COM
LC STN Files: ADISNEWS, AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN,

CSCHEM, DIOGENES, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, MEDLINE, PIRA, PROMT, RTECS*, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

429 REFERENCES IN FILE CA (1907 TO DATE)
12 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
429 REFERENCES IN FILE CAPLUS (1907 TO DATE)
4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> d sqide l14 tot

L14 ANSWER 1 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 475527-52-7 REGISTRY
CN **5-methylthioadenine/S-adenosyl homocysteine nucleosidase (adenosyl homocysteinase) (Thermus thermophilus strain HB8) (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN 264: PN: JP2002325574 SEQID: 858 claimed protein
FS PROTEIN SEQUENCE
SQL 220

PATENT ANNOTATIONS (PNTE):

Sequence Source	Patent Reference
Not Given	JP2002325574 claimed SEQID 858

SEQ 1 VTAFFAAEPE EASALREALG AGEALEAPFP LHRGEGVLVA ETGVGKVAAA
51 LAVAHVLTRF RPSESFFLGV AGALDPSLRA LDLLLAEKAV QWDVDLTPFG
101 RKPGETAFGV AFFPSDPALL ARAEKAALAL GLPFRRGVVA TGDRFLAQRE
151 EAERLRALHG ADAVEMEGAA ALMVAWRFRH PMVLLRVVTD GAGEGAALDF
201 QAFLREAARR LGLLARALVE
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PRP (Properties)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 2 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 475527-51-6 REGISTRY
CN **DNA (Thermus thermophilus strain HB8 5-methylthioadenine/S-adenosyl homocysteine nucleosidase (adenosyl homocysteinase) gene) (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN 263: PN: JP2002325574 SEQID: 857 claimed DNA
FS NUCLEIC ACID SEQUENCE
SQL 660
NA 63 a 235 c 257 g 105 t

PATENT ANNOTATIONS (PNTE):

Sequence Source	Patent Reference
Not Given	JP2002325574 claimed SEQID 857

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       151 ctggccgtgg cccacgtcct cacccgcttc cgcccctcgg agagcttctt
       201 cctgggggtg gcgggggccc tggacccttc cctccgcgcc ttggacctcc
       251 tcctggcgga gaaggcggtc cagtgggacg tggacctcac ccccttcggc
       301 cgcaagccgg gggagaccgc ctttggggtg gccttcttcc cctcggaccc
       351 cgccctcctc gcccgggcgg agaaggccgc cctggccttg ggccttccct
       401 tccggcgggg ggtggtggcc acgggggacc gctttctggc ccaaagggag
       451 gaggcggaaa ggcttcgcgc cctccacggg gcggacgccg tggagatgga
       501 gggggccgcg gccctcatgg tggcctggcg cttccgccac cccatggtcc
       551 tcctgcgcgt ggtgacggac ggggccgggg agggggcggc cttggacttc
       601 caggcctttt tgcgggaggc cgcaaggcgc cttgggctcc tcgcccgggc
       651 cctggtagag
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RELATED SEQUENCES AVAILABLE WITH SEQLINK
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PRP (Properties)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 3 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 473332-96-6 REGISTRY
CN **Desulfhydrase, homocysteine (Trichomonas vaginalis clone pAC2-1 403-residue fragment) (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN 7: PN: US6468762 SEQID: 10 claimed protein
FS PROTEIN SEQUENCE
SQL 403

PATENT ANNOTATIONS (PNTE):

Sequence Source	Patent Reference
Not Given	US6468762 claimed SEQID 10

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       101 VLTILKAGDH LISDECLYGC THALFEHALT KFGIQVDFIN TAIPGEVKKH
       151 MKPNTKIVYF ETPANPTLKI IDMERVCKEA HSQEGVLVIA DNTFCSPMIT
       201 NPVDFGVDVV VHSATKYING HTDVVAGLIC GKADLLQQIR MVGIKDITGS
       251 VISPHDAWLI TRGLSTLNIR MKAESENAMK VAEYLKSHPA VEKVYYPGFE
       301 DHEGHDIAKK QMRMYGSMIT FILKSGFEGA KKLLDNLKLI TLAVSLGGCE
       351 SLIQHPASMT HAVVPKEERE AAGITDGMIR LSVGIEDADE LIADFKQGLD
       401 ALL
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RELATED SEQUENCES AVAILABLE WITH SEQLINK
MF Unspecified
CI MAN

SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); PRP (Properties); USES (Uses)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 4 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 406871-24-7 REGISTRY
CN **Homocysteine desulfhydrase (Methanosarcina acetivorans strain C2A gene MA0808) (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN GenBank AAM04247
CN GenBank AAM04247 (Translated from: GenBank AE010742)
FS PROTEIN SEQUENCE
SQL 384

SEQ
1 MIYLDNAACT RLDERVFEAM KPYFFDTYAV ATSEFGYSMG IDAKEGLENS
51 REGIASGLGA APEEIVFTSG DTESSNMALK GVAWALREKK GKHIIISKIE
101 DFPVLNTAKT LQKQGFDVTF LDVDAEGFAD LEELKKAITK ETILVSIQHS
151 NQEIGTAQDL KAISEICEEK DVLLHTDATH SFTRLPLNVK DLPVDLVTMS
201 AHTIHGPRGI GALCIRKDTP IVKFMDGGFQ EFNLRAGVEN IPGAVGFATA
251 VKLVTEEENR QLAAMRDRVI ERALSEIPEV TLNGSREKRL PQNANLTFHY
301 VEGESVTLHM DMRGFAVSTG SACFSRSLEA SHVIRGIGGD HERAHGSVRF
351 TFGRYNRMED ADAAIDAMSE IVARLREISP LAKK

MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: BIOL (Biological study); PRP (Properties)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 5 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 350857-57-7 REGISTRY
CN **DNA (synthetic Trichomonas vaginalis adenosyl homocysteinase gene) (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN 9: PN: WO0151651 FIGURE: 6 claimed sequence
FS NUCLEIC ACID SEQUENCE
SQL 1599
NA 404 a 471 c 373 g 351 t

PATENT ANNOTATIONS (PNTE):

Sequence Source	Patent Reference
Not Given	WO2001051651 claimed FIGURE 6

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MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); OCCU (Occurrence); PROC (Process); PRP (Properties); USES (Uses)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 6 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 250285-33-7 REGISTRY
CN **DNA (synthetic Trichomonas vaginalis homocysteine desulfhydrase precursor gene plus flanks) (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN 1: PN: US5985540 SEQID: 9 claimed DNA
CN 1: PN: US5998191 SEQID: 9 unclaimed DNA
CN 1: PN: US6066467 SEQID: 9 claimed DNA
CN 1: PN: US6140102 SEQID: 9 claimed DNA
CN **DNA (synthetic peptide fusion protein with Trichomonas vaginalis clone pAC2-1 homocysteine desulfhydrase cDNA plus flanks)**
FS NUCLEIC ACID SEQUENCE
SQL 1240
NA 343 a 351 c 272 g 274 t

PATENT ANNOTATIONS (PNTE):

Sequence Source	Feature	Location	Patent Reference
Not Given			US5985540 claimed SEQID 9
Not given	CDS	18..1226	US5998191 unclaimed SEQID 9
	mat_peptide	39	
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	mat_peptide	39	
Not Given			US6140102

claimed
SEQID 9

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RELATED SEQUENCES AVAILABLE WITH SEQLINK
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)
5 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 7 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 220314-33-0 REGISTRY
CN DNA (Trichomonas vaginalis clone pAC2-1 gene mgl2 minus stop codon) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN **DNA (Trichomonas vaginalis clone pAC2-1 homocysteinase gene minus stop codon)**
FS NUCLEIC ACID SEQUENCE
SQL 1188
NA 323 a 340 c 264 g 261 t
NTE doublestranded

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MF   Unspecified
CI   MAN
SR   CA
LC   STN Files:   CA, CAPLUS
DT.CA  CAplus document type:  Patent
RL.P   Roles from patents:  BIOL (Biological study); PRP (Properties); USES
       (Uses)
              1 REFERENCES IN FILE CA (1907 TO DATE)
              1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14  ANSWER 8 OF 18  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   220314-32-9  REGISTRY
CN   DNA (synthetic peptide 7-amino acid histidine tag fusion protein with
     Trichomonas vaginalis clone pAC2-1 gene mgl2 homocysteine
     desulfhydrase-specifying plus 5'-flank) (9CI)  (CA INDEX NAME)
FS   NUCLEIC ACID SEQUENCE
SQL  1226
NA   339 a   348 c   269 g   270 t
NTE  doublestranded

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MF   Unspecified
CI   MAN
SR   CA
LC   STN Files:   CA, CAPLUS
DT.CA  CAplus document type:  Patent
RL.P   Roles from patents:  BIOL (Biological study); PRP (Properties); USES
       (Uses)
              1 REFERENCES IN FILE CA (1907 TO DATE)
              1 REFERENCES IN FILE CAPLUS (1907 TO DATE)
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L14 ANSWER 9 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 220314-31-8 REGISTRY
CN **Desulfhydrase, homocysteine (Trichomonas vaginalis clone pAC2-1 gene mgl2) (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN 13: PN: US5985540 SEQID: 10 claimed protein
CN **Desulfhydrase, homocysteine (synthetic Trichomonas vaginalis homocysteine desulfhydrase)**
FS PROTEIN SEQUENCE
SQL 396

PATENT ANNOTATIONS (PNTE):

Sequence Source	Patent Reference
Not Given	US5985540 claimed SEQID 10

SEQ
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151 VYFETPANPT LKIIDMERVC KEAHSQEGVL VIADNTFCSP MITNPVDFGV
201 DVVVHSATKY INGHTDVVAG LICGKADLLQ QIRMVGIKDI TGSVISPHDA
251 WLITRGLSTL NIRMKAESEN AMKVAEYLKS HPAVEKVYYP GFEDHEGHDI
301 AKKQMRMYGS MITFILKSGF EGAKKLLDNL KLITLAVSLG GCESLIQHPA
351 SMTHAVVPKE EREAAGITDG MIRLSVGIED ADELIADFKQ GLDALL
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MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PRP (Properties); USES (Uses)
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 10 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 220314-30-7 REGISTRY
CN **Peptide (synthetic 7-amino acid histidine tag) fusion protein with homocysteine desulfhydrase (Trichomonas vaginalis clone pAC2-1 gene mgl2) (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN 2: PN: US6066467 SEQID: 10 claimed protein
CN 2: PN: US6140102 SEQID: 10 claimed protein
CN 3: PN: US5985540 SEQID: 10 claimed protein
CN **Desulfhydrase, homocysteine (synthetic Trichomonas vaginalis homocysteine desulfhydrase precursor)**
CN **Peptide (synthetic) fusion protein with homocysteine desulfhydrase [31-leucine,172-glutamic acid,308-tyrosine] (Trichomonas vaginalis clone pAC2-1)**
FS PROTEIN SEQUENCE
SQL 403

PATENT ANNOTATIONS (PNTE):

Sequence Source	Patent Reference
Not Given	US5985540 claimed SEQID 10
	US6066467 claimed SEQID 10

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         |US6140102
         |claimed
         |SEQID 10

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251 VISPHDAWLI TRGLSTLNIR MKAESENAMK VAEYLKSHPA VEKVYYPGFE
301 DHEGHDIAKK QMRMYGSMIT FILKSGFEGA KKLLDNLKLI TLAVSLGGCE
351 SLIQHPASMT HAVVPKEERE AAGITDGMIR LSVGIEDADE LIADFKQGLD
401 ALL

RELATED SEQUENCES AVAILABLE WITH SEQLINK
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PRP (Properties); USES (Uses)
4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 11 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 204021-61-4 REGISTRY
CN **Desulfhydrase, homocysteine [117-glycine] (Trichomonas vaginalis gene mgl1) (9CI)** (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 398

SEQ 1 MSGHAIDPTH TDTLSIHANP QKDQFGAIVA PIYQTSTFLF DNCDQGGARF
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101 LKAGDHLISD DCLYGGTHAL FEHQLRKFGV EVDFIDMAVP GNIEKHLKPN
151 TRIVYFETPA NPTLKVIDIE DAVKQARKQK DILVIVDNTF ASPILTNPLD
201 LGVDIVVHSA TKYINGHTDV VAGLVCSRAD IIAKVKSQGI KDITGAIISP
251 HDAWLITRGT LTLDMRVKRA AENAQKVAEF LHEHKAVKKV YYPGLPDHPG
301 HEIAKKQMKM FGSMIAFDVD GLEKAKKVLD NCHVVSLAVS LGGPESLIQH
351 PASMTHAGVP KEEREAAGLT DNLIRLSVGC ENVQDIIDDL KQALDLVL
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 12 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 204021-60-3 REGISTRY
CN **DNA (Trichomonas vaginalis homocysteine desulfhydrase[117-glycine]-specifying plus flanks) (9CI)** (CA INDEX NAME)
FS NUCLEIC ACID SEQUENCE
SQL 1305
NA 374 a 376 c 270 g 285 t

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**RELATED SEQUENCES AVAILABLE WITH SEQLINK**
MF   Unspecified
CI   MAN
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL
DT.CA  CAplus document type:  Patent
RL.P   Roles from patents:  BIOL (Biological study); PRP (Properties); USES
       (Uses)
              1 REFERENCES IN FILE CA (1907 TO DATE)
              1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14  ANSWER 13 OF 18  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   204021-59-0  REGISTRY
CN   Desulfhydrase, homocysteine (Trichomonas vaginalis gene mgl2)
     (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   Lyase, methionine (Trichomonas vaginalis gene mgl2 subunit)
CN   Methionine γ-lyase (Trichomonas vaginalis gene mgl2 subunit)
FS   PROTEIN SEQUENCE
SQL  398

SEQ      1 MSGHAIDPTH TDTLSIHANP QKDQFGAIVA PIYQTSTFLF DNCDQGGARF
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       301 HEIAKKQMKM FGSMIAFDVD GLEKAKKVLD NCHVVSLAVS LGGPESLIQH
       351 PASMTHAGVP KEEREAAGLT DNLIRLSVGC ENVQDIIDDL KQALDLVL

**RELATED SEQUENCES AVAILABLE WITH SEQLINK**
MF   Unspecified
CI   MAN
SR   CA
LC   STN Files:   CA, CAPLUS, TOXCENTER, USPATFULL
DT.CA  CAplus document type:  Journal; Patent
RL.P   Roles from patents:  BIOL (Biological study); PRP (Properties); USES
       (Uses)
RL.NP  Roles from non-patents:  PRP (Properties)
              2 REFERENCES IN FILE CA (1907 TO DATE)
              2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14  ANSWER 14 OF 18  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   204021-57-8  REGISTRY
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CN **Desulfhydrase, homocysteine [113-glycine] (Trichomonas vaginalis gene mgl1) (9CI)** (CA INDEX NAME)
FS PROTEIN SEQUENCE
SQL 396

SEQ
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MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 15 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 204021-56-7 REGISTRY
CN **DNA (Trichomonas vaginalis homocysteine desulfhydrase[113-glycine]-specifying plus flanks) (9CI)** (CA INDEX NAME)
FS NUCLEIC ACID SEQUENCE
SQL 1248
NA 351 a 347 c 269 g 281 t
NTE doublestranded

SEQ
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   1 atttttagac aacatgtctc acgagagaat gaccccagca acagcatgca
  51 tccatgctaa tccacagaag gatcagtttg gagcagccat cccaccaatc
 101 taccaaacat caacattcgt tttcgataac tgccaacagg gtggaaacag
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 451 aaacacaaag attgtctatt tcgagacacc agccaaccca acactcaaga
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1051 ccagcaccca gcttcaatga ctcacgctgt cgttccaaag gaggagcgtg
1101 aggccgctgg tattacagat ggcatgatcc gcctttctgt cggtattgaa
1151 gatgccgacg aactcatcgc tgatttcaaa cagggccttg acgctctttt
1201 ataaactcta cttagtttct tgactttaat taaaaaaaaa aaaaaaaa
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MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: BIOL (Biological study); PRP (Properties); USES (Uses)
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 16 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 204021-55-6 REGISTRY
CN **Desulfhydrase, homocysteine (Trichomonas vaginalis gene mgl1)** (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2: PN: WO0100853 SEQID: 12 unclaimed protein
CN 3: PN: US6140102 SEQID: 12 claimed protein
CN 4: PN: US5998191 SEQID: 10 claimed protein
CN 5: PN: US5985540 SEQID: 12 claimed protein
CN 5: PN: US6066467 SEQID: 12 unclaimed protein
CN **Desulfhydrase, homocysteine (Trichomonas vaginalis clone pAC2-1 gene mgl1)**
CN **Homocysteinase (Trichomonas vaginalis gene mgl1)**
CN Lyase, methionine (Trichomonas vaginalis gene mgl1 subunit)
CN Methionine γ-lyase (Trichomonas vaginalis gene mgl1 subunit)
FS PROTEIN SEQUENCE
SQL 396

PATENT ANNOTATIONS (PNTE):

Sequence Source	Patent Reference
Not Given	US5985540 claimed SEQID 12
	US5998191 claimed SEQID 10
	US6066467 unclaimed SEQID 12
	US6140102 claimed SEQID 12
	WO2001000853 unclaimed SEQID 12

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201 DVVVHSATKY INGHTDVVAG LICGKADLLQ QIRMVGIKDI TGSVISPHDA
251 WLITRGLSTL NIRMKAESEN AMKVAEYLKS HPAVEKVYYP GFEDHEGHDI
301 AKKQMRMSGS MITFILKSGF EGAKKLLDNL KLITLAVSLG GCESLIQHPA
351 SMTHAVVPKE EREAAGITDG MIRLSVGIED ADELIADFKQ GLDALL

RELATED SEQUENCES AVAILABLE WITH SEQLINK
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PRP (Properties); USES (Uses)
RL.NP Roles from non-patents: PRP (Properties)
8 REFERENCES IN FILE CA (1907 TO DATE)
8 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 17 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN

RN 37288-63-4 REGISTRY
CN **Homocysteinase, ribosyl- (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN E.C. 3.3.1.3
CN Ribosylhomocysteinase
CN S-Ribosylhomocysteinase
CN S-Ribosylhomocysteine hydrolase
MF Unspecified
CI MAN
LC STN Files: ANABSTR, BIOSIS, CA, CAPLUS, CASREACT, TOXCENTER
DT.CA CAplus document type: Conference; Journal
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); PROC (Process); PRP (Properties); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: PRP (Properties)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
11 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
11 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 18 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 9024-41-3 REGISTRY
CN **Desulfhydrase, homocysteine (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN **E.C. 4.4.1.2**
CN **Homocysteinase**
CN Homocysteine α,γ-lyase
CN **Homocysteine desulfhydrase**
CN Homocysteine desulfurase
MF Unspecified
CI MAN
LC STN Files: BIOSIS, CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses); NORL (No role in record)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
34 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
34 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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FILE COVERS 1907 - 24 Oct 2005 VOL 143 ISS 18
FILE LAST UPDATED: 23 Oct 2005 (20051023/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L27 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:363697 HCAPLUS
DN 140:353226
ED Entered STN: 05 May 2004
TI Immunossay for establishing s-adenosyl methionine (SAM) and s-adenosyl homocysteine (SAH) ratio for use in cardiovascular risk assessment
IN Alfheim, Ingrid
PA **Axis-Shield Asa, Norway**
SO Brit. UK Pat. Appl., 19 pp.
CODEN: BAXXDU
DT Patent
LA English
IC ICM G01N033-68
ICS G01N033-53
CC 9-10 (Biochemical Methods)
Section cross-reference(s): 14
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2394770	A1	20040505	GB 2002-23667	20021010
PRAI	GB 2002-23667		20021010		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
GB 2394770	ICM	G01N033-68
	ICS	G01N033-53
GB 2394770	ECLA	G01N033/68A2D

AB A method for assaying SAM and SAH in a sample, said method comprising the steps of contacting a first aliquot of the sample with a ligand capable of binding to both SAM and to SAH, removing or degrading either SAM or SAH in a second aliquot of said sample, contacting said second aliquot with said ligand, and assessing the concns. of SAM and/or SAH in said first and second aliquots. A kit for use in the above method is also disclosed. The ratio of SAH to SAM is regarded as a marker for cardiovascular risk.
ST adenosyl methionine homocysteine immunoassay cardiovascular risk assessment
IT Cardiovascular system, disease
Immunoassay
Risk assessment
Test kits
(immunoassay for establishing s-adenosyl methionine (SAM) and s-adenosyl homocysteine (SAH) ratio for use in cardiovascular risk assessment)
IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immunoassay for establishing s-adenosyl methionine (SAM) and s-adenosyl homocysteine (SAH) ratio for use in cardiovascular risk assessment)
IT 979-92-0, S-Adenosyl **homocysteine** 29908-03-0
RL: **ANT (Analyte)**; DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immunoassay for establishing s-adenosyl methionine (SAM) and s-adenosyl **homocysteine** (SAH) ratio for use in cardiovascular risk assessment)
IT 9026-93-1, Adenosine deaminase

RL: ARG (Analytical reagent use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immunoassay for establishing s-adenosyl methionine (SAM) and s-adenosyl homocysteine (SAH) ratio for use in cardiovascular risk assessment)

IT 9025-54-1, S-Adenosyl **homocysteinase**
RL: ARU (Analytical role, unclassified); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immunoassay for establishing s-adenosyl methionine (SAM) and s-adenosyl homocysteine (SAH) ratio for use in cardiovascular risk assessment)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; WO 2000040973 A1
(2) Anon; WO 2001051651 A3 HCAPLUS
(3) Anon; US 5885767 A HCAPLUS
(4) Anon; US 5958717 A HCAPLUS
(5) Donnelly & Pronovost; Ann Clin Biochem 2000, V37, P194
(6) Wang; J Chromat 2001, V762, P59 HCAPLUS

L27 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:763310 HCAPLUS
DN 135:300667
ED Entered STN: 19 Oct 2001
TI Homocysteine assay in a body fluid sample
IN Connoly, Caroline; **Brady, Jeff**
PA **Axis-Shield ASA, UK**
SO PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-48
CC 9-2 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001077670	A2	20011018	WO 2001-GB1615	20010410
	WO 2001077670	A3	20020516		
	W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1272661	A2	20030108	EP 2001-919648	20010410
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003530574	T2	20031014	JP 2001-574876	20010410
	US 2003040030	A1	20030227	US 2002-857433	20020305
PRAI	GB 2000-8784	A	20000410		
	WO 2001-GB1615	W	20010410		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2001077670	ICM	G01N033-48
WO 2001077670	ECLA	C12Q001/48
US 2003040030	NCL	435/025.000
	ECLA	C12Q001/48

AB The present invention provides an improved method of assessing/quantifying the amount of homocysteine in a body fluid sample via an enzymic assay which comprises reducing background signal by treatment with one of the following: a reducing agent, a pyruvate deactivating agent, heat

treatment, or by lyophilizing or immobilizing the homocysteine converting enzyme.

ST homocysteine assay body fluid

IT Reaction
(Cycling; homocysteine assay in a body fluid sample)

IT Filters
(Exclusion; homocysteine assay in a body fluid sample)

IT Enzymes, uses
RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process); USES (Uses)
(Homocysteine converting; homocysteine assay in a body fluid sample)

IT Thiols (organic), biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(dithiols, binding agent; homocysteine assay in a body fluid sample)

IT Immobilization, biochemical
(enzyme; homocysteine assay in a body fluid sample)

IT Blood
Body fluid
Centrifugation
Concentration (condition)
Cryoprotectants
Erythrocyte
Filters
Filtration
Freeze drying
Heat treatment
Heating
Liquids
Molecular sieves
Neutralization
Oxidation
Reducing agents
Stabilizing agents
Standard substances, analytical
Sulfhydryl group
Test kits
(homocysteine assay in a body fluid sample)

IT Enzymes, uses
Reagents
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homocysteine assay in a body fluid sample)

IT Proteins, general, analysis
RL: ARU (Analytical role, unclassified); NUU (Other use, unclassified); ANST (Analytical study); USES (Uses)
(homocysteine assay in a body fluid sample)

IT Thiols (organic), biological studies
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(homocysteine assay in a body fluid sample)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(immobilized; homocysteine assay in a body fluid sample)

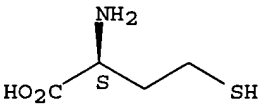
IT Disulfides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(organic; homocysteine assay in a body fluid sample)

IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; ANST (Analytical study)
(**homocysteine** assay in a body fluid sample)

IT 53-84-9, NAD 58-68-4, NADH 74-88-4, Methyl iodide, uses 302-01-2, Hydrazine, uses 541-59-3, Maleimide 3483-12-3, Dithiothreitol 5961-85-3, Triscarboxyethylphosphine 6892-68-8, Dithioerythritol 9001-05-2, Catalase 9001-60-9, Lactate dehydrogenase 9001-96-1, Pyruvate oxidase. 9014-19-1, Pyruvate carboxylase. 9014-20-4, Pyruvate dehydrogenase **9024-41-3**, Homocysteine desulfurase 9025-03-0, Acetoacetate decarboxylase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(homocysteine assay in a body fluid sample)
IT 7722-84-1, Hydrogen peroxide, reactions
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(homocysteine assay in a body fluid sample)
IT 462-10-2, Homocystine
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(homocysteine assay in a body fluid sample)
IT 127-17-3, Pyruvic acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(homocysteine assay in a body fluid sample)
IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; ANST (Analytical study)
(**homocysteine** assay in a body fluid sample)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.

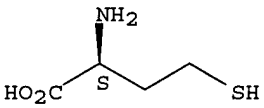


=> d all hitstr l37 tot

L37 ANSWER 1 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:551386 HCAPLUS
DN 142:214486
ED Entered STN: 09 Jul 2004
TI Homogeneous enzymatic colorimetric assay for total cysteine
AU Han, Qinghong; Xu, Mingxu; Tang, Li; Sun, Xinghua; Zhang, Nan; Tan, Xuezhong; Tan, Xiuying; Tan, Yuying; Hoffman, Robert M.
CS A/C Diagnostics LLC and Anti-Cancer, Inc., San Diego, CA, 92111, USA
SO Clinical Chemistry (Washington, DC, United States) (2004), 50(7), 1229-1231
CODEN: CLCHAU; ISSN: 0009-9147
PB American Association for Clinical Chemistry
DT Journal
LA English
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 14
AB A new, rapid, and sensitive enzymic colorimetric assay for total cysteine (tCYS) in plasma samples was developed. In addition, enzymic assay methods for total homocysteine and vitamin B6 in plasma were also developed. The simultaneous assay of tHCY, vitamin B6, and tCYS may be relevant to the study for the occurrence and prevalence of cardiovascular disease. The principles and protocols for these assays are presented.
ST enzymic colorimetric assay total cysteine
IT Colorimetry
(Enzymic; homogeneous enzymic colorimetric assay for total cysteine)
IT Blood analysis
Cardiovascular system, disease
Diagnosis
Human
(homogeneous enzymic colorimetric assay for total cysteine)
IT 52-90-4, Cysteine, analysis **6027-13-0, Homocysteine**
8059-24-3, Vitamin B6
RL: **ANT (Analyte)**; DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(homogeneous enzymic colorimetric assay for total cysteine)
IT 58-61-7, Adenosine, uses 9025-54-1, s-Adenosylhomocysteine hydrolase
13746-66-2, Potassium ferricyanide 16096-97-2, L-Dithiothreitol

42616-25-1, Methionine α,γ-lyase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homogeneous enzymic colorimetric assay for total cysteine)
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bland, J; Lancet 1986, V1, P307 MEDLINE
(2) Dudman, N; Clin Chem 1996, V42, P2028 HCAPLUS
(3) El-Khairy, L; Circulation 2001, V103, P2544 HCAPLUS
(4) El-Khairy, L; Clin Chem 2003, V49, P113 HCAPLUS
(5) El-Khairy, L; Clin Chem 2003, V49, P895 HCAPLUS
(6) Han, Q; Clin Chem 2002, V48, P1560 HCAPLUS
(7) Han, Q; Protein Express 1998, V14, P267 HCAPLUS
(8) Hortin, G; Clin Chem 2001, V47, P1121 HCAPLUS
(9) Linnet, K; Clin Chem 1998, V44, P1024 HCAPLUS
(10) Marcucci, R; Am J Clin Pathol 2001, V116, P56 HCAPLUS
(11) Ozkan, Y; Int J Cardiol 2002, V82, P269
(12) Refsum, H; Clin Chem 2004, V50, P3 HCAPLUS
(13) Tan, Y; Clin Chem 2000, V46, P1686 HCAPLUS
(14) Tan, Y; Clin Chem 2003, V49, P1029 HCAPLUS
(15) Tan, Y; Protein Express 1997, V9, P233 HCAPLUS
(16) Tanaka, H; Anal Lett 1981, V14, P111 HCAPLUS
(17) Tang, L; US 6448446 2002 HCAPLUS
(18) Ubbink, J; J Chromatogr 1991, V565, P441 HCAPLUS
(19) Yardim-Akaydin, S; Clin Chim Acta 2003, V338, P99 HCAPLUS
IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(homogeneous enzymic colorimetric assay for total cysteine)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **42616-25-1**, Methionine α,γ-lyase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homogeneous enzymic colorimetric assay for total cysteine)
RN 42616-25-1 HCAPLUS
CN Lyase, methionine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 2 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:417900 HCAPLUS
DN 139:3213
ED Entered STN: 01 Jun 2003
TI Total cysteine assay
IN Han, Qinghong; Xu, Mingxu; Tan, Yuying; Tang, Li
PA Anticancer, Inc., USA
SO PCT Int. Appl., 11 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-00
ICS G01N033-53
CC 9-2 (Biochemical Methods)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003044220	A1	20030530	WO 2002-US37420	20021120

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,

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            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
            PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
            UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
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            FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,
            CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
    CA 2466503          AA    20030530    CA 2002-2466503        20021120
    US 2003162239       A1    20030828    US 2002-301531         20021120
    US 6927038          B2    20050809
    EP 1456399          A1    20040915    EP 2002-784538         20021120
        R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
           IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
    JP 2005509441       T2    20050414    JP 2003-545841         20021120
PRAI US 2001-333532P    P     20011120
    WO 2002-US37420     W     20021120
CLASS
 PATENT NO.       CLASS  PATENT FAMILY CLASSIFICATION CODES
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 WO 2003044220    ICM    C12Q001-00
                  ICS    G01N033-53
 WO 2003044220    ECLA   C12Q001/34; C12Q001/48; G01N033/68A2D2
 US 2003162239    NCL    435/018.000
                  ECLA   C12Q001/527; G01N033/68A2D2
 JP 2005509441    FTERM  4B063/QA01; 4B063/QQ03; 4B063/QQ80; 4B063/QQ89;
                         4B063/QR18; 4B063/QR23; 4B063/QR41; 4B063/QR57;
                         4B063/QR64; 4B063/QR66; 4B063/QX01; 4B063/QX02
AB  A method to determine a total cysteine in biol. fluids utilizes similarly
    treated portions of the fluid with a homocysteinase and a
    non-specific desulfurase.
ST  cysteine assay
IT  Blood analysis
      Blood plasma
      Blood serum
      Body fluid
    Concentration (condition)
    Containers
    Disulfide group
    Oxidizing agents
    Pseudomonas putida
    Reducing agents
    Test kits
    Trichomonas vaginalis
       (total cysteine assay)
IT  Reagents
    RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
       (total cysteine assay)
IT  52-90-4, Cysteine, analysis 6027-13-0, Homocysteine
    RL: ANT (Analyte); ANST (Analytical study)
       (total cysteine assay)
IT  7783-06-4, Hydrogen sulfide, analysis
    RL: ANT (Analyte); ARU (Analytical role, unclassified); ANST (Analytical
    study)
       (total cysteine assay)
IT  9024-41-3, Homocysteinase  20074-52-6, Ferric ion, uses
    25265-76-3D, Phenylenediamine, dialkyl derivs.
    RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
       (total cysteine assay)
RE.CNT  8     THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Axis-Shield Plc; WO 01077670 A2 2001
(2) Dai Ichi Pure Chem Co Ltd; JP 2000338096 A 2000 HCAPLUS
(3) Ebinuma; JP 2000270895 A 2000 HCAPLUS
(4) El-Khairy; Circulation 2001, V103, P2544 HCAPLUS
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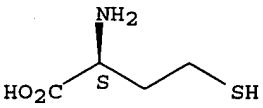
(5) Matsuyama; US 20020123088 A1 2002
(6) The University Court Of The University Of Glasgow; WO 98007872 A1 1998
(7) Ullman; US 6265220 B1 2001 HCAPLUS
(8) Xu; US 6066467 A 2000 HCAPLUS
IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; ANST (Analytical study)
(total cysteine assay)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **9024-41-3, Homocysteinase**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(total cysteine assay)
RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:808371 HCAPLUS
DN 137:322268
ED Entered STN: 24 Oct 2002
TI High specificity **homocysteinases** and their genes and uses in an assay for homocysteine in biological fluids
IN Tan, Yuying
PA Anticancer, Inc., USA
SO U.S., 29 pp., Cont.-in-part of U.S. 6,066,467.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12Q001-37
ICS C12Q001-00
INCL 435024000
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 3, 7, 14
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6468762	B1	20021022	US 2000-549098	20000412 <--
	US 6140102	A	20001031	US 1997-974609	19971119 <--
	US 5985540	A	19991116	US 1998-61337	19980417 <--
	US 5998191	A	19991207	US 1998-122129	19980724 <--
	US 6066467	A	20000523	US 1999-340991	19990628 <--
	CA 2369842	AA	20010104	CA 2000-2369842	20000628 <--
	WO 2001000853	A1	20010104	WO 2000-US17838	20000628 <--
	W: AU, CA, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1210443	A1	20020605	EP 2000-943262	20000628 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
	JP 2003503065	T2	20030128	JP 2001-506845	20000628 <--
PRAI	US 1997-899776	B2	19970724 <--		
	US 1997-918214	B2	19970825 <--		
	US 1997-941921	B2	19971001 <--		
	US 1997-974609	A2	19971119 <--		
	US 1998-61337	A2	19980417 <--		
	US 1998-122129	A2	19980724 <--		

US 1999-340991 A2 19990628 <--
US 2000-549098 A 20000412 <--
WO 2000-US17838 W 20000628 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6468762	ICM	C12Q001-37
	ICS	C12Q001-00
	INCL	435024000
US 6468762	NCL	435/024.000; 435/004.000; 435/023.000; 536/023.100; 536/023.200 <--
US 6140102	NCL	435/232.000; 435/004.000; 435/069.100; 435/252.300; 435/320.100; 530/300.000; 530/350.000; 536/023.200
	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2 <--
US 5985540	NCL	435/004.000; 435/232.000; 435/252.300; 435/320.100; 530/300.000; 530/350.000; 536/023.200
	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2 <--
US 5998191	NCL	435/232.000; 435/004.000; 435/069.100; 435/252.300; 435/320.100; 530/300.000; 530/350.000; 536/023.200
	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2 <--
US 6066467	NCL	435/023.000; 435/004.000; 435/975.000
	ECLA	C12Q001/527; G01N033/68A2D2 <--

AB The invention concerns **homocysteinases** enzymes which have sufficient specificity for homocysteine, as compared to cysteine that hydrogen sulfide can be used as a measure of homocysteine in a biol. fluid even in the presence of substantial amts. of cysteine, exceeding the level of homocysteine. The enzyme of desired specificity can be readily prepared by mutation and screening of naturally occurring **homocysteinases** or by constructing chimeric forms.

ST **homocysteinase** homocysteine hydrogen sulfide protein sequence Trichomonas cloning

IT Gene
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(expression; high specificity **homocysteinases**)

IT Animal tissue
(fluid from; high specificity **homocysteinases**)

IT Aeromonas
Blood analysis
Blood plasma
Blood serum
Clostridium
Fluorometry
Molecular cloning
Protein sequences
Pseudomonas
Trichomonas
Trichomonas vaginalis
Urine analysis
(high specificity **homocysteinases**)

IT Gene, microbial
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(high specificity **homocysteinases**)

IT DNA
RNA
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(high specificity **homocysteinases**)

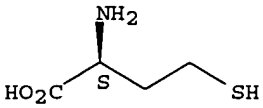
IT **473332-96-6P**
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); CAT (Catalyst use); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; high specificity **homocysteinases**)

IT 6027-13-0, L-Homocysteine
RL: ANT (Analyte); ANST (Analytical study)
(high specificity homocysteinases)
IT 7783-06-4, Hydrogen sulfide, analysis
RL: ANT (Analyte); FMU (Formation, unclassified); ANST (Analytical study); FORM (Formation, nonpreparative)
(high specificity homocysteinases)
IT 9024-41-3P, Homocysteinase
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); PRP (Properties); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(high specificity homocysteinases)
IT 473378-02-8, 6: PN: US6468762 SEQID: 9 unclaimed DNA 473378-03-9, 8: PN: US6468762 SEQID: 11 unclaimed DNA 473378-05-1 473378-06-2 473378-07-3 473378-08-4 473378-09-5 473378-10-8 473378-11-9
RL: PRP (Properties)
(unclaimed nucleotide sequence; high specificity homocysteinases and their genes and uses in an assay for homocysteine in biol. fluids)
IT 473378-04-0
RL: PRP (Properties)
(unclaimed protein sequence; high specificity homocysteinases and their genes and uses in an assay for homocysteine in biol. fluids)
IT 78641-45-9 220180-64-3 220180-65-4 220180-66-5 220180-67-6 220180-68-7 250249-88-8
RL: PRP (Properties)
(unclaimed sequence; high specificity homocysteinases and their genes and uses in an assay for homocysteine in biol. fluids)
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Allen; US 4940658 A 1990 HCAPLUS
(2) Allen; US 5438017 A 1995 HCAPLUS
(3) Anon; WO 9315220 1993 HCAPLUS
(4) Anon; WO 9807872 1998 HCAPLUS
(5) Anon; WO 9814562 1998 HCAPLUS
(6) Anon; WO 9905311 1999 HCAPLUS
(7) Araki, A; Journal of Chromatography 1987, V422, P43 HCAPLUS
(8) Bagnara, A; Molecular and Biochemical Parasitology 1996, V81, P1 HCAPLUS
(9) Dudman, N; Clinical Chemistry 1996, V42(12), P2028 HCAPLUS
(10) Esaki, N; Methods in Enzymology 1987, V143, P459 MEDLINE
(11) Gage, D; Nature 1997, V387, P891 HCAPLUS
(12) Garg, U; Clinical Chemistry 1997, V43(1), P141 HCAPLUS
(13) Gilfix, B; Clinical Chemistry 1997, V43(4), P687 HCAPLUS
(14) Matsumoto; US 4681841 A 1987 HCAPLUS
(15) Nakajima; US 5094947 A 1992 HCAPLUS
(16) Sundrehagen; US 5631127 A 1997 HCAPLUS
(17) Sundrehagen; US 5827645 A 1998 HCAPLUS
(18) Tan; US 5985540 A 1999 HCAPLUS
(19) Tan; US 5998191 A 1999 HCAPLUS
(20) Tan; US 6140102 A 2000 HCAPLUS
(21) van Atta; US 5478729 A 1995 HCAPLUS
(22) Xu; US 6066467 A 2000 HCAPLUS
IT 473332-96-6P
RL: BPN (Biosynthetic preparation); BSU (Biological study, unclassified); CAT (Catalyst use); PRP (Properties); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; high specificity homocysteinases)
RN 473332-96-6 HCAPLUS
CN Desulfhydrase, homocysteine (Trichomonas vaginalis clone pAC2-1 403-residue fragment) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT 6027-13-0, L-Homocysteine
RL: ANT (Analyte); ANST (Analytical study)
(high specificity homocysteinases)
RN 6027-13-0 HCAPLUS

CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **9024-41-3P, Homocysteinase**
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); PRP (Properties); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(high specificity **homocysteinases**)
RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 4 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:570668 HCAPLUS
DN 137:121906
ED Entered STN: 01 Aug 2002
TI Homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection
IN Xu, Mingxu; Han, Qinghong; Tan, Yuying
PA Anticancer, Inc., USA
SO U.S., 14 pp., Cont.-in-part of U.S. 6,066,467.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12Q001-37
ICS C12Q001-00; C12Q001-48; C12Q001-52; C12Q033-53
INCL 435024000
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 14
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	US 6426194	B1	20020730	US 2000-495889	20000201	<--
	US 6066467	A	20000523	US 1999-340991	19990628	<--
PRAI	US 1999-118031P	P	19990201	<--		
	US 1999-340991	A2	19990628	<--		
	US 1997-899776	B2	19970724	<--		
	US 1997-918214	B2	19970825	<--		
	US 1997-941921	B2	19971001	<--		
	US 1997-974609	A2	19971119	<--		
	US 1998-61337	A2	19980417	<--		
	US 1998-122129	A2	19980724	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
US 6426194	ICM	C12Q001-37	
	ICS	C12Q001-00; C12Q001-48; C12Q001-52; C12Q033-53	
	INCL	435024000	
US 6426194	NCL	435/024.000; 435/004.000; 435/015.000; 435/016.000; 435/968.000; 435/975.000	<--
US 6066467	NCL	435/023.000; 435/004.000; 435/975.000	
	ECLA	C12Q001/527; G01N033/68A2D2	<--

AB Enzymic methods to determine the concentration of pyridoxal 5'-phosphate (PLP) in biol. fluids are described. The methods of the invention are useful to assess risk for cardiovascular disease. The assay can be a homogeneous assay using the ability of PLP to function as a co-enzyme for **homocysteinase** and related enzymes and measuring the products of the reaction preferably spectrophotometrically. The invention also

includes improvements in sensitivity of assays for measuring hydrogen sulfide production by measuring fluorescence as opposed to absorbance of the oxidized product of H2S with N,N-dialkyl p-phenylene diamine.

ST homogeneous enzymic assay vitamin B6 hydrogen sulfide detection

IT Biological materials
Blood analysis
Blood plasma
Body fluid
Cardiovascular system, disease
Colorimetry
Concentration (condition)
Fluorometry
Human
Optical absorption
Oxidizing agents
Precipitation (chemical)
Reaction
Spectrophotometry
Test kits
UV and visible spectroscopy
(homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)

IT **9024-41-3, Homocysteinase**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(apoenzyme from; homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)

IT 54-47-7, Pyridoxal 5'-phosphate **6027-13-0, Homocysteine**
7783-06-4, Hydrogen sulfide, analysis 8059-24-3, Vitamin B6
RL: **ANT (Analyte)**; ANST (Analytical study)
(homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)

IT 106-50-3D, p-Phenylene diamine, dialkyl derivs. 2836-02-4, N,N-Dibutyl p-phenylene diamine 7439-92-1D, Lead, ion, uses 9012-96-8, Cysteine lyase **42616-25-1**, Methioninase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)

RE.CNT 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Allen; US 4940658 A 1990 HCAPLUS
(2) Allen; US 5438017 A 1995 HCAPLUS
(3) Anon; WO 9315220 1993 HCAPLUS
(4) Anon; WO 9807872 1998 HCAPLUS
(5) Anon; WO 9814562 1998 HCAPLUS
(6) Anon; WO 9905311 1999 HCAPLUS
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(31) McCully; Nature Medicine 1996, V2(4), P386 HCAPLUS
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(33) Mudd; American Journal of Human Genetics 1985, V37, P1 MEDLINE
(34) Nygard; The New England Journal of Medicine 1997, V337(4), P230 MEDLINE
(35) Pennist; Science 1997, V276, P705
(36) Reynolds; Fed Proc Abst No 2185 1983, V42, P665
(37) Riley; Molecular and Biochemical Parasitology 1992, V51, P161 HCAPLUS
(38) Robinson; Cleveland Clinic Journal of Medicine 1994, V16(6), P438
(39) Selhub; New England Journal of Medicine 1995, V332, P286 MEDLINE
(40) Shipchandler; Clinical Chemistry 1995, V41(7), P991 HCAPLUS
(41) Stampfer; Journal of the American Medical Association 1992, V268, P877 MEDLINE
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(44) Tan; US 5985540 A 1999 HCAPLUS
(45) Tan; US 5998191 A 1999 HCAPLUS
(46) Tan; Protein Expression and Purification 1997, V9, P233 HCAPLUS
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(48) Tanaka; Journal of Applied Biochemistry 1980, V2, P439 HCAPLUS
(49) Thong; Experimental Parasitology 1987, V63, P143 HCAPLUS
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(52) Thong; Molecular and Biochemical Parasitology 1987, V23, P223 HCAPLUS
(53) Ueland; Atherosclerotic Cardiovascular Disease, Hemostasis and Endothelial Function 1992, P183
(54) van Atta; US 5478729 A 1995 HCAPLUS
(55) Vilaseca; Clinical Chemistry 1997, V43(4), P690 HCAPLUS
(56) Watanabe; Nucleic Acids Research 1986, V14(11), P4393 HCAPLUS
(57) Wolfe; Nature 1997, V387, P894 HCAPLUS
(58) Xu; US 6066467 A 2000 HCAPLUS
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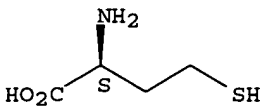
(60) Zuo; Microbiology 1995, V141, P2637 HCAPLUS

IT **9024-41-3, Homocysteinase**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(apoenzyme from; homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)
RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; ANST (Analytical study)
(homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **42616-25-1**, Methioninase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)
RN 42616-25-1 HCAPLUS
CN Lyase, methionine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:31675 HCAPLUS
DN 134:83111
ED Entered STN: 12 Jan 2001
TI Methods and compositions for assaying analytes
IN Yuan, Chong-Sheng
PA General Atomics, USA
SO PCT Int. Appl., 187 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-00
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 7
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001002600	A2	20010111	WO 2000-US18057	20000630 <--
WO 2001002600	A3	20020110		
WO 2001002600	C2	20020725		
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6376210	B1	20020423	US 1999-347878	19990706 <--
CA 2377665	AA	20010111	CA 2000-2377665	20000630 <--
GB 2368641	A1	20020508	GB 2002-425	20000630 <--
GB 2368641	B2	20041006		
PRAI US 1999-347878	A	19990706 <--		
US 1999-457205	A	19991206 <--		
WO 2000-US18057	W	20000630 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2001002600	ICM	C12Q001-00
WO 2001002600	ECLA	C12Q001/25; C12Q001/34; G01N033/573; G01N033/84 <--
US 6376210	NCL	435/018.000; 435/023.000; 435/195.000; 435/252.300; 435/320.100; 435/455.000
	ECLA	C12Q001/25; G01N033/84; C12Q001/34; G01N033/573 <--
GB 2368641	ECLA	C12Q001/25; C12Q001/34; G01N033/573; G01N033/84 <--

AB Compns. and methods for assaying analytes, preferably, small mol. analytes are provided. Assay methods employ, in place of antibodies or mols. that bind to target analytes or substrates, modified enzymes, called substrate trapping enzymes. These modified enzymes retain binding affinity or have enhanced binding affinity for a target substrate or analyte, but have

attenuated catalytic activity with respect to that substrate or analyte. The modified enzymes are provided. In particular, mutant S-adenosylhomocysteine (SAH) hydrolases, substantially retaining binding affinity or having enhanced binding affinity for homocysteine or S-adenosylhomocysteine but having attenuated catalytic activity, are provided. Conjugates of the modified enzymes and a facilitating agent, such as agents that aid in purification or linkage to a solid support are also provided.

ST compn assaying analyte

IT Enzymes, analysis
RL: ANT (Analyte); ANST (Analytical study)
(Bile acid-binding; methods and compns. for assaying analytes)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Bile salts-binding; methods and compns. for assaying analytes)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Cholesterol-binding; methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(DNA-binding; methods and compns. for assaying analytes)

IT Conformation
(DNA; methods and compns. for assaying analytes)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Ethanol binding; methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(Fluorescent; methods and compns. for assaying analytes)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Folate-binding; methods and compns. for assaying analytes)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Glucose-binding; methods and compns. for assaying analytes)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Homocysteine-binding; methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(IgG-binding; methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(Polysaccharide binding; methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(RNA-binding; methods and compns. for assaying analytes)

IT Esters, analysis
RL: ANT (Analyte); ANST (Analytical study)
(Sterol fatty acid; methods and compns. for assaying analytes)

IT Carbohydrates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(Tetroses; methods and compns. for assaying analytes)

IT Enzymes, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Uric acid-binding; methods and compns. for assaying analytes)

IT Enzyme functional sites
(active; methods and compns. for assaying analytes)

IT Purification
(affinity; methods and compns. for assaying analytes)

IT Carbohydrates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(aldoses; methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(contractile; methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(defense; methods and compns. for assaying analytes)
IT DNA
RL: ANT (Analyte); ANST (Analytical study)
(double-stranded; methods and compns. for assaying analytes)
IT Vitamins
RL: ANT (Analyte); ANST (Analytical study)
(fat-soluble; methods and compns. for assaying analytes)
IT Carbohydrates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(heptoses; methods and compns. for assaying analytes)
IT Carbohydrates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(ketoses; methods and compns. for assaying analytes)
IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(lipid-binding; methods and compns. for assaying analytes)
IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(metal-binding; methods and compns. for assaying analytes)
IT Affinity
Amniotic fluid
Animal cell
Animal tissue
Anions
Artery
Blood analysis
Body fluid
Catalysts
Cell
Cerebrospinal fluid
Composition
Conjugation (molecular association)
Connective tissue
DNA repair
Disease, animal
Drugs
Epithelium
Epitopes
Escherichia coli
Feces
Fluorescent substances
Fungi
Genetic markers
Hydrolysis
Immobilization, biochemical
Infection
Insect (Insecta)
Ions
Lactobacillus casei
Liver
Lymph node
Michaelis constant
Molecules
Mucus
Muscle
Mutation
Neoplasm
Nerve
Organ, animal
Oxidation
Pancreas
Plant cell
Plasmids
Protein sequences

Purification
Recombination, genetic
Saliva
Semen
Sputum
Sulfhydryl group
Tear (ocular fluid)
Test kits
Therapy
Thermoanaerobacterium thermosulfurigenes
Transcription, genetic
Urine analysis
Yeast
(methods and compns. for assaying analytes)

IT Amino acids, analysis
Bile acids
Bile salts
Cardiolipins
Cerebrosides
Fusion proteins (chimeric proteins)
Gangliosides
Glycerides, analysis
Glycerophospholipids
Hexoses
Inorganic compounds
Lipids, analysis
Monosaccharides
Nucleic acids
Nucleosides, analysis
Nucleotides, analysis
Oligonucleotides
Oligosaccharides, analysis
Organic compounds, analysis
Pentoses
Peptides, analysis
Phosphatidylcholines, analysis
Phosphatidylethanolamines, analysis
Phosphatidylinositols
Phosphatidylserines
Polysaccharides, analysis
Sphingolipids
Sphingomyelins
Sterols
Transport proteins
Vitamins
Waxes
RL: ANT (Analyte); ANST (Analytical study)
(methods and compns. for assaying analytes)

IT Antibodies
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and compns. for assaying analytes)

IT Coenzymes
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and compns. for assaying analytes)

IT Reagents
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and compns. for assaying analytes)

IT Enzymes, uses
RL: ARG (Analytical reagent use); CAT (Catalyst use); ANST (Analytical study); USES (Uses)
(methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(motile; methods and compns. for assaying analytes)

IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)

(nutrient; methods and compns. for assaying analytes)
IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(regulatory; methods and compns. for assaying analytes)
IT DNA formation
(replication; methods and compns. for assaying analytes)
IT Fatty acids, analysis
RL: ANT (Analyte); ANST (Analytical study)
(saturated; methods and compns. for assaying analytes)
IT DNA
RL: ANT (Analyte); ANST (Analytical study)
(single-stranded; methods and compns. for assaying analytes)
IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(storage; methods and compns. for assaying analytes)
IT Proteins, specific or class
RL: ANT (Analyte); ANST (Analytical study)
(structural; methods and compns. for assaying analytes)
IT Recombination, genetic
(transposition; methods and compns. for assaying analytes)
IT Vitamins
RL: ANT (Analyte); ANST (Analytical study)
(water-soluble; methods and compns. for assaying analytes)
IT 9033-25-4, Methyltransferase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Betane-homocysteine; methods and compns. for assaying analytes)
IT 50-69-1, Ribose 50-81-7, Ascorbic acid, analysis 50-89-5, Thymidine, analysis 50-99-7, Glucose, analysis 52-90-4, Cysteine, analysis 53-57-6, Nadph 53-84-9, Nad+ 54-47-7, Pyridoxal 5'-phosphate 56-40-6, Glycine, analysis 56-41-7, Alanine, analysis 56-45-1, Serine, analysis 56-65-5, Atp, analysis 56-82-6, Glyceraldehyde 56-84-8, Aspartic acid, analysis 56-85-9, Glutamine, analysis 56-86-0, Glutamic acid, analysis 56-87-1, Lysine, analysis 57-10-3, Palmitic acid, analysis 57-11-4, Octadecanoic acid, analysis 57-48-7, Fructose, analysis 57-88-5, Cholesterol, analysis 58-61-7, Adenosine, analysis 58-64-0, Adp, analysis 58-68-4, Nadh 58-85-5, Biotin 58-86-6, Xylose, analysis 58-96-8, Uridine 58-97-9, Ump, analysis 58-98-0, Udp, analysis 59-23-4, Galactose, analysis 59-30-3, analysis 59-43-8, Thiamine, analysis 59-67-6, Nicotinic acid, analysis 60-18-4, Tyrosine, analysis 61-19-8, Amp, analysis 61-90-5, Leucine, analysis 63-37-6, Cmp 63-38-7, Cdp 63-39-8, Utp 63-68-3, Methionine, analysis 63-91-2, Phenylalanine, analysis 64-17-5, Ethanol, analysis 65-23-6, Pyridoxin 65-42-9, Lyxose 65-46-3, Cytidine 65-47-4, Ctp 68-19-9, Vitamin b12 69-93-2, Uric acid, analysis 70-47-3, Asparagine, analysis 71-00-1, Histidine, analysis 72-18-4, Valine, analysis 72-19-5, Threonine, analysis 73-22-3, Tryptophan, analysis 73-32-5, Isoleucine, analysis 74-79-3, Arginine, analysis 79-83-4, Pantothenic acid 83-48-7, Stigmasterol 83-88-5, Riboflavin, analysis 85-32-5, Gmp 86-01-1, Gtp 107-43-7, Betaine 118-00-3, Guanosine, analysis 122-32-7, Triolein 134-35-0 143-07-7, Lauric acid, analysis 146-91-8, Gdp 147-81-9, Arabinose 147-85-3, Proline, analysis 365-07-1, Dtmp 365-08-2, Dttp 453-17-8, Triose 491-97-4, Dtdp 506-30-9, Arachidic acid 544-63-8, Myristic acid, analysis 555-43-1, Tristearin 555-44-2, Tripalmitin 557-59-5, Lignoceric acid 653-63-4, Damp 800-73-7, Dcdp 902-04-5, Dgmp 964-26-1, Dump 979-92-0, S-Adenosylhomocysteine 1032-65-1, Dcmp 1406-16-2, Vitamin d 1406-18-4, Vitamin e 1758-51-6, Erythrose 1927-31-7, Datp 2056-98-6, Dctp 2152-76-3, Idose 2564-35-4, Dgtp 2793-06-8, Dadp 3019-74-7, Sedoheptulose 3432-99-3 3458-28-4, Mannose 3493-09-2, Dgdp 4033-27-6 5556-48-9, Ribulose 5987-68-8, Altrose **6027-13-0**, **Homocysteine** 6038-51-3, Allose 7439-89-6, Iron, analysis 7439-95-4, Magnesium, analysis 7439-96-5, Manganese, analysis 7439-98-7, Molybdenum, analysis 7440-02-0, Nickel, analysis 7440-09-7, Potassium, analysis 7440-21-3, Silicon, analysis 7440-23-5, Sodium, analysis 7440-31-5, Tin, analysis 7440-38-2, Arsenic, analysis 7440-42-8, Boron, analysis 7440-47-3, Chromium, analysis 7440-48-4,

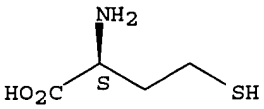
Cobalt, analysis 7440-50-8, Copper, analysis 7440-62-2, Vanadium, analysis 7440-66-6, Zinc, analysis 7440-70-2, Calcium, analysis 7553-56-2, Iodine, analysis 7732-18-5, Water, analysis 7782-41-4, Fluorine, analysis 7782-44-7, Oxygen, analysis 7782-50-5, Chlorine, analysis 9004-34-6, Cellulose, analysis 9004-61-9, Hyaluronic acid 9005-25-8, Starch, analysis 9005-79-2, Glycogen, analysis 11103-57-4, Vitamin a 12001-79-5, Vitamin k 12672-30-9, Arsenic ion, analysis 15158-11-9, analysis 16887-00-6, Chloride, analysis 16984-48-8, Fluoride, analysis 19163-87-2, Gulose 29884-64-8, Threose 30077-17-9, Talose **42616-25-1**, Methioninase
RL: **ANT (Analyte)**; ANST (Analytical study)
(methods and compns. for assaying analytes)

IT 9001-36-9, Glucokinase 9001-51-8, Hexokinase 9001-56-3, Hydroxy steroid dehydrogenase 9001-78-9, Alkaline phosphatase 9002-03-3, Dihydrofolate reductase 9002-12-4, Urate oxidase 9002-13-5, Urease 9003-99-0, Peroxidase 9023-99-8D, Cystathionine β-synthase, mutant 9025-54-1D, S-Adenosylhomocysteine hydrolase, mutant 9026-00-0, Cholesterol esterase 9028-69-7, Methylenetetrahydrofolate reductase 9028-76-6, Cholesterol oxidase 9031-61-2, Thymidylate synthase 9031-72-5, Alcohol dehydrogenase 9055-00-9, Glucose isomerase 37290-90-7, Methionine synthase 50812-37-8, Glutathione S-transferase 61969-99-1, Luciferase
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and compns. for assaying analytes)

IT **6027-13-0**, **Homocysteine 42616-25-1**, Methioninase
RL: **ANT (Analyte)**; ANST (Analytical study)
(methods and compns. for assaying analytes)

RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 42616-25-1 HCAPLUS
CN Lyase, methionine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:756902 HCAPLUS
DN 133:319274
ED Entered STN: 27 Oct 2000
TI Biological fluid enzymic assay methods for folate and other analytes
IN Han, Quinghong; Tang, Li; Xu, Mingxu; Tan, Yuying; Yagi, Shigeo
PA Anticancer, Inc., USA
SO PCT Int. Appl., 12 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-00
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 7
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000063420	A2	20001026	WO 2000-US10430	20000417 <--
	WO 2000063420	A3	20010426		

W: AU, CA, JP
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

CA 2369010	AA	20001026	CA 2000-2369010	20000417	<--
US 6329162	B1	20011211	US 2000-550723	20000417	<--
EP 1171630	A2	20020116	EP 2000-922298	20000417	<--
EP 1171630	B1	20041201			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI					
JP 2002541856	T2	20021210	JP 2000-612497	20000417	<--
AU 765931	B2	20031002	AU 2000-42503	20000417	<--
AT 283929	E	20041215	AT 2000-922298	20000417	<--
US 2002037545	A1	20020328	US 2001-3597	20011030	<--
US 6653092	B2	20031125			
PRAI US 1999-129730P	P	19990416	<--		
US 2000-550723	A3	20000417	<--		
WO 2000-US10430	W	20000417	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
WO 2000063420	ICM	C12Q001-00	
WO 2000063420	ECLA	C12Q001/48	<--
US 6329162	NCL	435/015.000; 435/004.000	
	ECLA	C12Q001/48	<--
US 2002037545	NCL	435/016.000	
	ECLA	C12Q001/48	<--

AB A method to assess the level of folate in a biol. sample comprises: providing said sample with glycine N-methyltransferase (GMT) and with an excess of S-adenosyl methionine (SAM) and of glycine; providing a control which contains no folate with said GMT and excess SAM and glycine in comparable amts. to those provided to the sample; and comparing the concentration of at least one product formed in the sample with the concns. of said product formed in the control, whereby the difference in levels of said product in the sample as compared to the control is directly proportional to the level of folate in the sample. Also disclosed is a method to detect and measure the concentration of analytes which can be subjected to protocols that generate hydrogen peroxide. This method comprises measuring the level of hydrogen peroxide by adding peroxidase and a dialkylphenylene diamine.

ST folate body fluid enzyme assay; peroxide assay peroxidase dialkylphenylene diamine; glycine methyltransferase adenosyl methionine folate assay

IT Blood analysis
Body fluid
Oxidizing agents
(biol. fluid enzymic assay methods for folate and other analytes)

IT Rat
(glycine N-methyltransferase purification from liver of; biol. fluid enzymic assay methods for folate and other analytes)

IT Liver
(glycine N-methyltransferase purification from rat; biol. fluid enzymic assay methods for folate and other analytes)

IT 135-16-0DP, derivs.
RL: ANT (Analyte); FMU (Formation, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); USES (Uses)
(biol. fluid enzymic assay methods for folate and other analytes)

IT 7722-84-1, Hydrogen peroxide, analysis
RL: ANT (Analyte); FMU (Formation, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(biol. fluid enzymic assay methods for folate and other analytes)

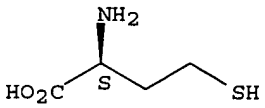
IT 59-30-3, analysis 107-97-1, Sarcosine
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(biol. fluid enzymic assay methods for folate and other analytes)

IT 37228-72-1P, Glycine N-methyltransferase
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PUR (Purification

or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(biol. fluid enzymic assay methods for folate and other analytes)
IT 9003-99-0, Peroxidase **9024-41-3, Homocysteinase** 9025-54-1, S-Adenosyl **homocysteinase** 9029-22-5, Sarcosine oxidase 63363-84-8
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(biol. fluid enzymic assay methods for folate and other analytes)
IT 56-40-6, Glycine, biological studies 56-86-0, Glutamic acid, biological studies 29908-03-0
RL: ARG (Analytical reagent use); RCT (Reactant); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(biol. fluid enzymic assay methods for folate and other analytes)
IT 95-53-4, o-Toluidine, biological studies 604-44-4, 4-Chloro-1-naphthol 13746-66-2 20074-52-6, Ferric ion, biological studies 25265-76-3D, Phenylenediamine, dialkyl derivs. 128373-43-3, DBPDA
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(biol. fluid enzymic assay methods for folate and other analytes)
IT 134-35-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(biol. fluid enzymic assay methods for folate and other analytes)
IT 979-92-0, S-Adenosyl **homocysteine 6027-13-0, Homocysteine** 7783-06-4, Hydrogen sulfide, analysis
RL: **ANT (Analyte)**; FMU (Formation, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(in folate assay; biol. fluid enzymic assay methods for folate and other analytes)
IT **9024-41-3, Homocysteinase**
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(biol. fluid enzymic assay methods for folate and other analytes)
RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; FMU (Formation, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(in folate assay; biol. fluid enzymic assay methods for folate and other analytes)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L37 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:535310 HCAPLUS
DN 133:132107
ED Entered STN: 04 Aug 2000
TI Homogeneous enzymatic assay for vitamin B6 and improvements in H2S detection
IN Xu, Mingxu; Han, Qinghong; Tan, Yuying

PA Anticancer, Inc., USA
SO PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-00
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 14, 79
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2000044932	A2	20000803	WO 2000-US2721	20000201	<--
	WO 2000044932	A3	20010308			
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	US 6066467	A	20000523	US 1999-340991	19990628	<--
	CA 2361077	AA	20000803	CA 2000-2361077	20000201	<--
	EP 1157128	A2	20011128	EP 2000-910055	20000201	<--
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	JP 2002535009	T2	20021022	JP 2000-596172	20000201	<--
	AU 780804	B2	20050421	AU 2000-32209	20000201	<--
PRAI	US 1999-118031P	P	19990201	<--		
	US 1999-340991	A	19990628	<--		
	US 1997-899776	B2	19970724	<--		
	US 1997-918214	B2	19970825	<--		
	US 1997-941921	B2	19971001	<--		
	US 1997-974609	A2	19971119	<--		
	US 1998-61337	A2	19980417	<--		
	US 1998-122129	A2	19980724	<--		
	WO 2000-US2721	W	20000201	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000044932	ICM	C12Q001-00
US 6066467	NCL	435/023.000; 435/004.000; 435/975.000
	ECLA	C12Q001/527; G01N033/68A2D2 <--

AB Enzymic methods to determine the concentration of pyridoxal 5'-phosphate (PLP) in biol. fluids are described. The methods of the invention are useful to assess risk for cardiovascular disease. The assay can be a homogeneous assay using the ability of PLP to function as a co-enzyme for **homocysteinase** and related enzymes and measuring the products of the reaction preferably spectrophotometrically. The invention also includes improvements in sensitivity of assays for measuring hydrogen sulfide production by measuring fluorescence as opposed to absorbance of the oxidized product of H2S with N,N-dialkyl p-phenylene diamine.

ST vitamin B6 homogeneous enzyme assay; hydrogen sulfide fluorescence assay; pyridoxal phosphate body fluid enzyme assay

IT Cardiovascular system
(disease, risk for, assessment of; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT Risk assessment
(for cardiovascular disease; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT Blood analysis
Body fluid
Fluorometry
Oxidizing agents
Spectrophotometry

Test kits
(homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT 9012-96-8D, immobilized **9024-41-3D, Homocysteinase**, immobilized **42616-25-1D**, Methioninase, immobilized
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(apoenzyme of; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT **6027-13-0, Homocysteine** 8059-24-3, Vitamin B6
RL: **ANT (Analyte)**; ANST (Analytical study)
(homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT 7783-06-4, Hydrogen sulfide, analysis
RL: ANT (Analyte); FMU (Formation, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT 54-47-7, Pyridoxal 5'-phosphate
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT 106-50-3D, p-Phenylene diamine, N,N-dialkyl derivs. 454-29-5, Homocysteine 13746-66-2, Potassium ferricyanide
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT 7439-92-1, Lead, biological studies
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(ion; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT 9012-96-8 **9024-41-3, Homocysteinase 42616-25-1**, Methioninase
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(pyridoxal 5'-phosphate-dependent, apoenzyme of; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

IT **9024-41-3D, Homocysteinase**, immobilized **42616-25-1D**, Methioninase, immobilized
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(apoenzyme of; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

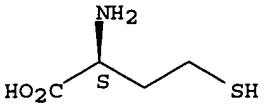
RN 42616-25-1 HCAPLUS
CN Lyase, methionine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; ANST (Analytical study)
(homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)

RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **9024-41-3, Homocysteinase 42616-25-1,**
Methioninase
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(pyridoxal 5'-phosphate-dependent, apoenzyme of; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)
RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 42616-25-1 HCAPLUS
CN Lyase, methionine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:344073 HCAPLUS
DN 133:2202
ED Entered STN: 24 May 2000
TI High specificity homocysteine enzymic assays for biological samples
IN Xu, Mingxu; Tan, Yuying; Han, Qinghong; Tang, Li
PA Anticancer, Inc., USA
SO U.S., 37 pp., Cont.-in-part of U.S. Ser. No. 122,129.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12Q001-37
ICS C12Q001-00
INCL 435023000
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 3, 7, 14
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6066467	A	20000523	US 1999-340991	19990628 <--
	US 6140102	A	20001031	US 1997-974609	19971119 <--
	US 5985540	A	19991116	US 1998-61337	19980417 <--
	US 5998191	A	19991207	US 1998-122129	19980724 <--
	CA 2361077	AA	20000803	CA 2000-2361077	20000201 <--
	WO 2000044932	A2	20000803	WO 2000-US2721	20000201 <--
	WO 2000044932	A3	20010308		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
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	US 6426194	B1	20020730	US 2000-495889	20000201 <--
	JP 2002535009	T2	20021022	JP 2000-596172	20000201 <--
	AU 780804	B2	20050421	AU 2000-32209	20000201 <--
	US 6468762	B1	20021022	US 2000-549098	20000412 <--
	CA 2369842	AA	20010104	CA 2000-2369842	20000628 <--
	WO 2001000853	A1	20010104	WO 2000-US17838	20000628 <--

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        RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
            PT, SE
    EP 1210443          A1    20020605    EP 2000-943262         20000628 <--
        R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, FI, CY
    JP 2003503065       T2    20030128    JP 2001-506845         20000628 <--
PRAI US 1997-899776     B2    19970724  <--
    US 1997-918214      B2    19970825  <--
    US 1997-941921      B2    19971001  <--
    US 1997-974609      A2    19971119  <--
    US 1998-61337       A2    19980417  <--
    US 1998-122129      A2    19980724  <--
    US 1999-118031P     P     19990201  <--
    US 1999-340991      A     19990628  <--
    WO 2000-US2721      W     20000201  <--
    US 2000-549098      A     20000412  <--
    WO 2000-US17838     W     20000628  <--
CLASS
 PATENT NO.       CLASS  PATENT FAMILY CLASSIFICATION CODES
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 US 6066467       ICM    C12Q001-37
                  ICS    C12Q001-00
                  INCL   435023000
 US 6066467       NCL    435/023.000; 435/004.000; 435/975.000
                  ECLA   C12Q001/527; G01N033/68A2D2                    <--
 US 6140102       NCL    435/232.000; 435/004.000; 435/069.100; 435/252.300;
                         435/320.100; 530/300.000; 530/350.000; 536/023.200
                  ECLA   C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2
                                                                        <--
 US 5985540       NCL    435/004.000; 435/232.000; 435/252.300; 435/320.100;
                         530/300.000; 530/350.000; 536/023.200
                  ECLA   C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2
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 US 5998191       NCL    435/232.000; 435/004.000; 435/069.100; 435/252.300;
                         435/320.100; 530/300.000; 530/350.000; 536/023.200
                  ECLA   C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2
                                                                        <--
 US 6426194       NCL    435/024.000; 435/004.000; 435/015.000; 435/016.000;
                         435/968.000; 435/975.000                       <--
 US 6468762       NCL    435/024.000; 435/004.000; 435/023.000; 536/023.100;
                         536/023.200                                    <--
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AB Novel enzymic methods to determine the concentration of homocysteine in biol. fluids are described. In a typical embodiment of the invention, the biol. fluid sample is from a patient, and the methods of the invention are useful to assess risk for cardiovascular disease. The novel methods of the invention involve use of particular **homocysteinase** enzymes that permit the determination of homocysteine concns. in biol. samples without interference from the concns. of cysteine and/or of methionine that are routinely present in such samples. There is also provided a diagnostic kit for use in determining the amount of homocysteine in a biol. sample comprising (a) a **homocysteinase** having the aforementioned characteristics, and (b) at least one reagent capable of being used to determine the amount of product formed in the **homocysteinase** reaction. In a further aspect, the **homocysteinase** is provided as a chimeric mol. that comprises amino acid subsequences derived from, or patterned on, more than one **homocysteinase**, and which is typically produced from a chimeric polynucleotide that encodes therefor. Addnl. enhancements in homocysteine assay methodol. include use of the enzyme γ-glutamylcysteine synthetase to further limit any interference from cysteine present in the biol. samples.

ST homocysteine enzyme assay biol fluid; **homocysteinase** chimeric homocysteine fluorometry assay

IT Disulfide group
(agent reducing; high specificity homocysteine enzymic assays for biol. samples)

IT Cardiovascular system
(disease; high specificity homocysteine enzymic assays for biol. samples)
IT Animal tissue
(fluid of; high specificity homocysteine enzymic assays for biol. samples)
IT Risk assessment
(for cardiovascular disease; high specificity homocysteine enzymic assays for biol. samples)
IT Blood analysis
Body fluid
Buffers
DNA sequences
Detergents
Diagnosis
Enzyme kinetics
Fermentation
Fluorometry
Molecular cloning
Protein sequences
Reducing agents
Surfactants
Test kits
Urine analysis
(high specificity homocysteine enzymic assays for biol. samples)
IT Reagents
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(high specificity homocysteine enzymic assays for biol. samples)
IT Fusion proteins (chimeric proteins)
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(high specificity homocysteine enzymic assays for biol. samples)
IT Gene, microbial
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(high specificity homocysteine enzymic assays for biol. samples)
IT Pseudomonas putida
Trichomonas vaginalis
(**homocysteinase** of; high specificity homocysteine enzymic assays for biol. samples)
IT **220314-30-7P**
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; high specificity homocysteine enzymic assays for biol. samples)
IT 77-86-1, Tris buffer 7632-05-5, Sodium phosphate 11129-12-7, Borate
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(buffer; high specificity homocysteine enzymic assays for biol. samples)
IT 9023-64-7P, γ-Glutamylcysteine synthetase
RL: ARU (Analytical role, unclassified); BPN (Biosynthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(for reducing interference from cysteine; high specificity homocysteine enzymic assays for biol. samples)
IT 7783-06-4, Hydrogen sulfide, analysis
RL: **ANT (Analyte)**; FMU (Formation, unclassified); ANST (Analytical study); FORM (Formation, nonpreparative)
(high specificity **homocysteine** enzymic assays for biol. samples)
IT **6027-13-0**, L-**Homocysteine**
RL: **ANT (Analyte)**; THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high specificity **homocysteine** enzymic assays for biol. samples)
IT 60-24-2, β-Mercaptoethanol 93-05-0 99-98-9 106-50-3D,

p-Phenylene diamine, N,N-dialkyl derivs. 2836-02-4 3483-12-3, DL-Dithiothreitol 13746-66-2, Potassium ferricyanate 20074-52-6D, compds., uses 51805-45-9, TCEP 105293-89-8
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(high specificity homocysteine enzymic assays for biol. samples)

IT **9024-41-3P, Homocysteinase**
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); CAT (Catalyst use); PRP (Properties); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(high specificity homocysteine enzymic assays for biol. samples)

IT **250285-33-7P**
RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(nucleotide sequence; high specificity homocysteine enzymic assays for biol. samples)

IT 250285-34-8 250289-27-1, 6: PN: US5985540 SEQID: 15 unclaimed DNA 250289-42-0, 7: PN: US5985540 SEQID: 16 unclaimed DNA 250289-56-6, 8: PN: US5985540 SEQID: 17 unclaimed DNA 250289-70-4, 9: PN: US5985540 SEQID: 18 unclaimed DNA 250289-80-6 250289-88-4 250290-12-1
RL: PRP (Properties)
(unclaimed nucleotide sequence; high specificity homocysteine enzymic assays for biol. samples)

IT **204021-55-6**
RL: PRP (Properties)
(unclaimed protein sequence; high specificity homocysteine enzymic assays for biol. samples)

IT 78641-45-9 210887-98-2 220180-64-3 220180-65-4 220180-66-5 220180-67-6 220180-68-7 250249-88-8
RL: PRP (Properties)
(unclaimed sequence; high specificity homocysteine enzymic assays for biol. samples)

IT 52-90-4, L-Cysteine, analysis 63-68-3, Methionine, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(without interference from; high specificity homocysteine enzymic assays for biol. samples)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Allen; US 4940658 1990 HCAPLUS
(2) Allen; US 5438017 1995 HCAPLUS
(3) Anon; WO 9315220 1993 HCAPLUS
(4) Anon; WO 9807872 1998 HCAPLUS
(5) Anon; WO 9814562 1998 HCAPLUS
(6) Araki, A; Journal of Chromatography 1987, V422, P43 HCAPLUS
(7) Bagnara, A; Molecular and Biochemical Parasitology 1996, V81, P1 HCAPLUS
(8) Dudman, N; Clinical Chemistry 1996, V42(12), P2028 HCAPLUS
(9) Esaki, N; Methods in Enzymology 1987, V143, P459 MEDLINE
(10) Gage, D; Nature 1997, V387, P891 HCAPLUS
(11) Garg, U; Clinical Chemistry 1997, V43(1), P141 HCAPLUS
(12) Gilfix, B; Clinical Chemistry 1997, V43(4), P687 HCAPLUS
(13) Sundrehagen; US 5631127 1997 HCAPLUS
(14) Sundrehagen; US 5827645 1998 HCAPLUS
(15) Tan; US 5985540 1999 HCAPLUS
(16) van Atta; US 5478729 1995 HCAPLUS

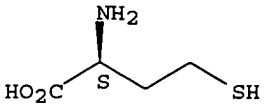
IT **220314-30-7P**
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; high specificity homocysteine enzymic assays for biol. samples)

RN 220314-30-7 HCAPLUS
CN Peptide (synthetic 7-amino acid histidine tag) fusion protein with homocysteine desulfhydrase (Trichomonas vaginalis clone pAC2-1 gene mgl2) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **6027-13-0, L-Homocysteine**
RL: **ANT (Analyte)**; THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high specificity **homocysteine** enzymic assays for biol. samples)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **9024-41-3P, Homocysteinase**
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); CAT (Catalyst use); PRP (Properties); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(high specificity homocysteine enzymic assays for biol. samples)
RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **250285-33-7P**
RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)
(nucleotide sequence; high specificity homocysteine enzymic assays for biol. samples)
RN 250285-33-7 HCAPLUS
CN DNA (synthetic Trichomonas vaginalis homocysteine desulfhydrase precursor gene plus flanks) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **204021-55-6**
RL: PRP (Properties)
(unclaimed protein sequence; high specificity homocysteine enzymic assays for biol. samples)
RN 204021-55-6 HCAPLUS
CN Desulfhydrase, homocysteine (Trichomonas vaginalis gene mgl1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:779171 HCAPLUS
DN 132:20773
ED Entered STN: 09 Dec 1999
TI High specificity homocysteine assays for biological samples
IN Tan, Yuying; Lenz, Martin
PA Anticancer Inc., USA
SO U.S., 33 pp., Cont.-in-part of U.S. Ser. No. 61,337.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12N009-86
ICS C12Q003-00; C07K001-00; C07H021-04
INCL 435232000
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 14
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5998191	A	19991207	US 1998-122129	19980724 <--

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     US 6140102           A     20001031    US 1997-974609         19971119 <--
     US 5985540           A     19991116    US 1998-61337          19980417 <--
     US 6066467           A     20000523    US 1999-340991         19990628 <--
     US 6468762           B1    20021022    US 2000-549098         20000412 <--
PRAI US 1997-899776       B2    19970724  <--
     US 1997-918214       B2    19970825  <--
     US 1997-941921       A2    19971001  <--
     US 1997-974609       A2    19971119  <--
     US 1998-61337        A2    19980417  <--
     US 1998-122129       A2    19980724  <--
     US 1999-340991       A2    19990628  <--
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                 INCL   435232000
 US 5998191      NCL    435/232.000; 435/004.000; 435/069.100; 435/252.300;
                        435/320.100; 530/300.000; 530/350.000; 536/023.200
                 ECLA   C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2
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                        435/320.100; 530/300.000; 530/350.000; 536/023.200
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 US 5985540      NCL    435/004.000; 435/232.000; 435/252.300; 435/320.100;
                        530/300.000; 530/350.000; 536/023.200
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 US 6468762      NCL    435/024.000; 435/004.000; 435/023.000; 536/023.100;
                        536/023.200                                     <--
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AB Novel enzymic methods to determine the concentration of homocysteine in biol. fluids are described. In a typical embodiment of the invention, the biol. fluid sample is from a patient, and the methods of the invention are useful to assess risk for cardiovascular disease. The novel methods of the invention involve use of particular **homocysteinase** enzymes that permit the determination of homocysteine concns. in biol. samples without interference from the concns. of cysteine and/or of methionine that are routinely present in such samples. There is also provided a diagnostic kit for use in determining the amount of homocysteine in a biol. sample comprising (a) a **homocysteinase** having the aforementioned characteristics, and (b) at least one reagent capable of being used to determine the amount of product formed in the **homocysteinase** reaction. In a further aspect, the **homocysteinase** is provided as a chimeric mol. that comprises amino acid subsequences derived from, or patterned on, more than one **homocysteinase**, and which is typically produced from a chimeric polynucleotide that encodes therefor. Addnl. enhancements in homocysteine assay methodol. include use of the enzyme γ-glutamylcysteine synthetase to further limit any interference from cysteine present in the biol. samples.

ST homocysteine assay biol

IT Cardiovascular system
(disease; high specificity homocysteine assays for biol. samples)

IT Aeromonas
Body fluid
Buffers
Clostridium
Diagnosis
Disulfide group
Protein sequences
Pseudomonas
Pseudomonas putida
Standard substances, analytical
Test kits

Trichomonas
Trichomonas vaginalis
UV and visible spectroscopy
(high specificity homocysteine assays for biol. samples)
IT Reagents
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(high specificity homocysteine assays for biol. samples)
IT Polynucleotides
RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(high specificity homocysteine assays for biol. samples)
IT **204021-55-6, Desulfhydrase, homocysteine**
(Trichomonas vaginalis gene mgl-1)
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(amino acid sequence; high specificity homocysteine assays for biol. samples)
IT 7783-06-4, Hydrogen sulfide, analysis
RL: **ANT (Analyte)**; ARU (Analytical role, unclassified); ANST (Analytical study)
(high specificity **homocysteine** assays for biol. samples)
IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high specificity **homocysteine** assays for biol. samples)
IT 93-05-0 99-98-9 106-50-3D, -p-Phenylenediamine, N,N-dialkyl 2836-02-4 **9024-41-3, Homocysteinase** 13746-66-2, Potassium ferricyanate 20074-52-6, Ferric ion, uses 105293-89-8
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(high specificity homocysteine assays for biol. samples)
IT 52-90-4, Cysteine, analysis 63-68-3, Methionine, analysis 3483-12-3, D,L-Dithiothreitol 9002-93-1, Triton x-100 9023-64-7, γ-Glutamylcysteine synthetase 11129-12-7, Borate
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(high specificity homocysteine assays for biol. samples)
IT 78641-45-9 210887-98-2 220180-61-0, Ggnrlagqe peptide+ 220180-62-1, Rvckeahsq peptide+ 220180-63-2, Qmrmygsmi peptide+ 220180-64-3 220180-65-4 220180-66-5 220180-67-6 220180-68-7 250249-88-8
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(high specificity homocysteine assays for biol. samples)
IT **250285-33-7** 250285-34-8 250289-27-1, 6: PN: US5985540 SEQID: 15 unclaimed DNA 250289-42-0, 7: PN: US5985540 SEQID: 16 unclaimed DNA 250289-56-6, 8: PN: US5985540 SEQID: 17 unclaimed DNA 250289-70-4, 9: PN: US5985540 SEQID: 18 unclaimed DNA 250289-80-6 250289-88-4 250290-12-1
RL: PRP (Properties)
(unclaimed nucleotide sequence; high specificity homocysteine assays for biol. samples)
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Allen; US 4940658 1990 HCAPLUS
(2) Allen; US 5438017 1995 HCAPLUS
(3) Anon; WO 9315220 1993 HCAPLUS
(4) Anon; WO 9807872 1998 HCAPLUS
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(20) Markos, A; FEMS Microbiology Letters 1996, V135, P259 HCAPLUS
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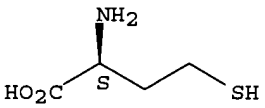
IT **204021-55-6, Desulfhydrase, homocysteine**
(Trichomonas vaginalis gene mgl-1)
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(amino acid sequence; high specificity homocysteine assays for biol. samples)
RN 204021-55-6 HCAPLUS
CN Desulfhydrase, homocysteine (Trichomonas vaginalis gene mgl1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **6027-13-0, Homocysteine**
RL: **ANT (Analyte)**; THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high specificity **homocysteine** assays for biol. samples)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **9024-41-3, Homocysteinase**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(high specificity homocysteine assays for biol. samples)
RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **250285-33-7**
RL: PRP (Properties)
(unclaimed nucleotide sequence; high specificity homocysteine assays for biol. samples)
RN 250285-33-7 HCAPLUS
CN DNA (synthetic Trichomonas vaginalis homocysteine desulfhydrase precursor gene plus flanks) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:205247 HCAPLUS
DN 130:220162
ED Entered STN: 01 Apr 1999

TI Methods and compositions for quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**
IN Rozzell, J. David, Jr.
PA Biocatalytics, Inc., USA
SO U.S., 13 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C12Q001-00
ICS C12Q001-48; C12Q001-37; C12Q001-54
INCL 435004000
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 6, 7, 34
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5885767	A	19990323	US 1998-83459	19980522 <--
PRAI US 1998-83459		19980522 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5885767	ICM	C12Q001-00
	ICS	C12Q001-48; C12Q001-37; C12Q001-54
	INCL	435004000
US 5885767	NCL	435/004.000; 435/014.000; 435/015.000; 435/023.000; 435/026.000
	ECLA	C12Q001/25; C12Q001/48; C12Q001/527; G01N033/68A2D2 <--

AB A method for quantitating L-homocysteine and/or L-methionine in a solution involves contacting a solution containing L-homocysteine and/or L-methionine with a reagent comprising **methionine** gamma-**lyase** and a cofactor capable of forming a Schiff base with the L-methionine and/or L-homocysteine for a time sufficient to catalyze the conversion of L-homocysteine and/or L-methionine to 2-ketobutyrate. The amount of 2-ketobutyrate formed is determined, and the amount of L-homocysteine and/or L-methionine present in the original solution can be determined based on the amount of 2-ketobutyrate formed. A composition for measuring the amount of L-homocysteine and/or L-methionine in a solution comprises **methionine** gamma-**lyase**, a cofactor capable of forming a Schiff base with the L-methionine and/or L-homocysteine and at least one 2-ketobutyrate detecting agent, but is substantially free of L-methionine, L-homocysteine, 2-ketobutyrate, pyruvate and mercury.
ST homocysteine methionine detn **methionine** gamma **lyase** ketobutyrate
IT Schiff bases
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(amino acid; quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)
IT Aeromonas
Brevibacterium casei
Pseudomonas putida
(**methionine** gamma-**lyase** source; quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)
IT Carboxylic acids, biological studies
RL: BSU (Biological study, unclassified); RCT (Reactant); REM (Removal or disposal); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(oxo, 2-; quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)
IT **Blood**
Blood analysis
Body fluid

Ceramics
Colorimetry
Dyes
Filter paper
Immobilization, biochemical
Paper
Pseudomonas ovalis
Reducing agents
Urine
Urine analysis
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT Thiols (organic), reactions
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT Schiff bases
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT Diatomite
Glass, analysis
Polyamides, analysis
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT Onium compounds
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(tetrazolium, derivs.; quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 63-68-3, L-Methionine, analysis **6027-13-0**, L-**Homocysteine**
RL: **ANT (Analyte)**; BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(quantitating L-**homocysteine** and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 626-72-2, L-Homocystine
RL: **ANT (Analyte)**; RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)
(quantitating L-**homocysteine** and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT **42616-25-1**, **Methionine** .γ.- **lyase**
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PROC (Process); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 9001-60-9, Lactic dehydrogenase
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 54-47-7D, Pyridoxal phosphate, derivs.
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BPR

(Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 119-26-6, 2,4-Dinitrophenylhydrazine
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 60-24-2D, β-Mercaptoethanol, salts 299-11-6D, Phenazine methosulfate, derivs. 507-09-5D, Thioacetic acid, salts 956-48-9D, 2,6-Dichlorophenolindophenol, derivs. 1910-42-5D, Methyl viologen, derivs. 3483-12-3D, Dithiothreitol, salts 6892-68-8D, Dithioerythritol, salts 16971-29-2D, Borohydride, salts
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 7439-97-6, Mercury, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 37340-89-9, Diaphorase
RL: ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 58-68-4D, NADH, derivs.
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 53-84-9D, NAD, derivs.
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 600-18-0, 2-Ketobutyric acid
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); RCT (Reactant); REM (Removal or disposal); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 1344-28-1, Alumina, analysis 7631-86-9, Silica, analysis 9002-86-2, Polyvinylchloride 9002-88-4 9003-07-0 9003-53-6 9004-34-6, Cellulose, analysis 25087-26-7 101239-42-3, Eupergit
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

IT 127-17-3, Pyruvic acid, biological studies
RL: BSU (Biological study, unclassified); RCT (Reactant); REM (Removal or disposal); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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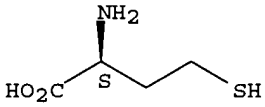
(17) Tanaka, H; Biochemistry 1977, V16, P100 HCAPLUS
(18) Ueland, P; Clinical Chemistry 1993, V39(3), P1764
(19) van Atta; US 5478729 1995 HCAPLUS
IT **6027-13-0, L-Homocysteine**
RL: **ANT (Analyte)**; BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(quantitating L-**homocysteine** and/or L-methionine in a solution based on **methionine** gamma-**lyase**)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **42616-25-1, Methionine .γ.- lyase**
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PROC (Process); USES (Uses)
(quantitating L-homocysteine and/or L-methionine in a solution based on **methionine** gamma-**lyase**)
RN 42616-25-1 HCAPLUS
CN Lyase, methionine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L37 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:96390 HCAPLUS
DN 130:165151
ED Entered STN: 12 Feb 1999
TI High specificity homocysteine assays for biological samples using **homocysteinase**
IN Tan, Yuying; Lenz, Martin; Perry, Andrew W.; Hoffman, Robert M.
PA Anticancer, Inc., USA
SO PCT Int. Appl., 109 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-25
ICS C12Q001-68

CC 9-2 (Biochemical Methods)
Section cross-reference(s): 3, 6, 7, 10, 14, 34
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9905311	A1	19990204	WO 1998-US15430	19980724 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6140102	A	20001031	US 1997-974609	19971119 <--
	US 5985540	A	19991116	US 1998-61337	19980417 <--
	CA 2296734	AA	19990204	CA 1998-2296734	19980724 <--
	AU 9885127	A1	19990216	AU 1998-85127	19980724 <--
	AU 758729	B2	20030327		
	EP 1000170	A1	20000517	EP 1998-935998	19980724 <--
	R: BE, CH, DE, FR, GB, LI				
	JP 2000513589	T2	20001017	JP 1999-510146	19980724 <--
	JP 3337693	B2	20021021		
PRAI	US 1997-899776	A	19970724 <--		
	US 1997-918214	A	19970825 <--		
	US 1997-941921	A	19971001 <--		
	US 1997-974609	A	19971119 <--		
	US 1998-61337	A2	19980417 <--		
	WO 1998-US15430	W	19980724 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9905311	ICM	C12Q001-25
	ICS	C12Q001-68
WO 9905311	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2 <--
US 6140102	NCL	435/232.000; 435/004.000; 435/069.100; 435/252.300; 435/320.100; 530/300.000; 530/350.000; 536/023.200
	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2 <--
US 5985540	NCL	435/004.000; 435/232.000; 435/252.300; 435/320.100; 530/300.000; 530/350.000; 536/023.200
	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2 <--

AB The novel methods of the invention involve use of particular **homocysteinase** enzymes that permit the determination of homocysteine concns. in biol. samples without interference from the concns. of cysteine and/or of methionine that are routinely present in such samples. There is also provided a diagnostic kit for use in determining the amount of homocysteine in a biol. sample comprising (a) a **homocysteinase** having the aforementioned characteristics, and (b) at least one reagent capable of being used to determine the amount of product formed in the **homocysteinase** reaction. In a further aspect, the **homocysteinase** is provided as a chimeric mol. that comprises amino acid subsequences derived from, or patterned on, more than one **homocysteinase**, and which is typically produced from a chimeric polynucleotide that encodes therefor. Addnl. enhancements in homocysteine assay methodol. include use of the enzyme γ-glutamylcysteine synthetase to further limit any interference from cysteine present in the biol. samples. This assay may be applied to the diagnosis of cardiovascular diseases.

ST homocysteine detn **homocysteinase** DNA sequence Trichomonas; cardiovascular disease diagnosis homocysteine detn **homocysteinase**

IT Cardiovascular system
(disease; high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT Animal tissue
(fluid; high specificity homocysteine assays for biol. samples using **homocysteinase**)
IT Aeromonas
Blood
Blood analysis
Blood plasma
Blood serum
Body fluid
Clostridium
DNA sequences
Diagnosis
Disulfide group
Enzyme functional sites
Escherichia coli
Eukaryote (Eukaryotae)
Prokaryote
Protein sequences
Pseudomonas
Pseudomonas putida
Reducing agents
Test kits
Trichomonas
Trichomonas vaginalis
Urine
Urine analysis
(high specificity homocysteine assays for biol. samples using **homocysteinase**)
IT Amino acids, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)
IT DNA
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)
IT Fusion proteins (chimeric proteins)
RL: ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(**homocysteinase**; high specificity homocysteine assays for biol. samples using **homocysteinase**)
IT Gene, microbial
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(mgl1; high specificity homocysteine assays for biol. samples using **homocysteinase**)
IT Gene, microbial
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(mgl2; high specificity homocysteine assays for biol. samples using **homocysteinase**)
IT **204021-55-6, Desulfhydrase, homocysteine**
(Trichomonas vaginalis gene mgl1) **220314-30-7**
220314-31-8
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(amino acid sequence; high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 10043-35-3, Boric acid (H3BO3), analysis
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(buffer; high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 127-17-3, Pyruvic acid, analysis 600-18-0, α-Ketobutyric acid
RL: **ANT (Analyte)**; ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(high specificity **homocysteine** assays for biol. samples using **homocysteinase**)

IT 7664-41-7, Ammonia, analysis 7783-06-4, Hydrogen sulfide, analysis
RL: **ANT (Analyte)**; BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(high specificity **homocysteine** assays for biol. samples using **homocysteinase**)

IT **6027-13-0, L-Homocysteine**
RL: **ANT (Analyte)**; BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(high specificity **homocysteine** assays for biol. samples using **homocysteinase**)

IT 9023-64-7, γ-Glutamylcysteine synthetase 9023-99-8, Cystathionine β-synthetase 37256-59-0, Cysteine oxidase 37318-56-2, Cysteine tRNA synthetase
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT **9024-41-3, Homocysteinase**
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 9001-60-9, Lactate dehydrogenase 9025-54-1, S-Adenosylhomocysteine hydrolyase 9082-71-7, Leucine dehydrogenase
RL: ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 63-68-3, L-Methionine, analysis
RL: ARU (Analytical role, unclassified); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 52-90-4, L-Cysteine, analysis
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 93-05-0, N,N-Diethyl-p-phenylenediamine 99-98-9, N,N-Dimethyl-p-phenylenediamine 106-50-3D, p-Phenylenediamine, dialkyl derivative 2836-02-4, N,N-Dibutyl-p-phenylenediamine 7439-89-6, Iron, analysis 13746-66-2, Potassium ferricyanate 20074-52-6, Ferric cation, analysis 105293-89-8, N,N-Dipropyl-p-phenylenediamine
RL: ARU (Analytical role, unclassified); BUU (Biological use,

unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 60-24-2 3483-12-3, DL-Dithiothreitol 5961-85-3, Tris-(2-carboxyethyl)phosphine
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 56-40-6, Glycine, biological studies 56-41-7, L-Alanine, biological studies 56-45-1, L-Serine, biological studies 56-84-8, L-Aspartic acid, biological studies 56-85-9, L-Glutamine, biological studies 56-86-0, L-Glutamic acid, biological studies 60-18-4, L-Tyrosine, biological studies 61-90-5, L-Leucine, biological studies 63-91-2, L-Phenylalanine, biological studies 70-47-3, L-Asparagine, biological studies 72-18-4, L-Valine, biological studies 72-19-5, L-Threonine, biological studies 73-22-3, L-Tryptophan, biological studies 73-32-5, L-Isoleucine, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT 78641-45-9 210887-98-2 220180-61-0 220180-62-1 220180-63-2 220180-64-3 220180-65-4 220180-66-5 220180-67-6 220180-68-7
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT **220314-32-9**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(nucleotide sequence; high specificity homocysteine assays for biol. samples using **homocysteinase**)

IT **220314-33-0**
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(nucleotide sequence; high specificity homocysteine assays for biol. samples using **homocysteinase**)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Campbell, R; WO 9807872 A 1998 HCAPLUS
(2) Hart, D; WO 9814562 A 1998 HCAPLUS
(3) Hoffman, R; 2nd International Conference on Homocysteine Metabolism Nijmegen Netherlands Netherlands Journal of Medicine 1998, V52(Suppl), PS41
(4) Robinson, K; Cleveland Clinic Journal of Medicine 1994, V61(6), P438 MEDLINE
(5) Sundrehagen, E; US 5827645 A 1998 HCAPLUS
(6) van Atta, R; US 5478729 A 1995 HCAPLUS

IT **204021-55-6, Desulfhydrase, homocysteine** (Trichomonas vaginalis gene mgl1) **220314-30-7** **220314-31-8**
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(amino acid sequence; high specificity homocysteine assays for biol. samples using **homocysteinase**)

RN 204021-55-6 HCAPLUS
CN Desulfhydrase, homocysteine (Trichomonas vaginalis gene mgl1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

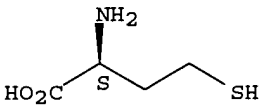
RN 220314-30-7 HCAPLUS
CN Peptide (synthetic 7-amino acid histidine tag) fusion protein with homocysteine desulfhydrase (Trichomonas vaginalis clone pAC2-1 gene mgl2)

(9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 220314-31-8 HCAPLUS
CN Desulfhydrase, homocysteine (Trichomonas vaginalis clone pAC2-1 gene mgl2) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **6027-13-0**, L-**Homocysteine**
RL: **ANT (Analyte)**; BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(high specificity **homocysteine** assays for biol. samples using **homocysteinase**)
RN 6027-13-0 HCAPLUS
CN L-Homocysteine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **9024-41-3**, **Homocysteinase**
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(high specificity homocysteine assays for biol. samples using **homocysteinase**)
RN 9024-41-3 HCAPLUS
CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **220314-32-9**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(nucleotide sequence; high specificity homocysteine assays for biol. samples using **homocysteinase**)
RN 220314-32-9 HCAPLUS
CN DNA (synthetic peptide 7-amino acid histidine tag fusion protein with Trichomonas vaginalis clone pAC2-1 gene mgl2 homocysteine desulfhydrase-specifying plus 5'-flank) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **220314-33-0**
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
(nucleotide sequence; high specificity homocysteine assays for biol. samples using **homocysteinase**)
RN 220314-33-0 HCAPLUS
CN DNA (Trichomonas vaginalis clone pAC2-1 gene mgl2 minus stop codon) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

=> d his full

(FILE 'HOME' ENTERED AT 12:09:22 ON 24 OCT 2005)

FILE 'HCAPLUS' ENTERED AT 12:09:29 ON 24 OCT 2005
L1 1 SEA ABB=ON PLU=ON US2003040030/PN OR (US2002-857433# OR

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              GB2000-8784# OR WO2001-GB1615#)/AP,PRN

     FILE 'REGISTRY' ENTERED AT 12:10:33 ON 24 OCT 2005

     FILE 'HCAPLUS' ENTERED AT 12:10:40 ON 24 OCT 2005
L2             TRA L1 1- RN :       19 TERMS

     FILE 'REGISTRY' ENTERED AT 12:10:40 ON 24 OCT 2005
L3          19 SEA ABB=ON  PLU=ON  L2

     FILE 'WPIX' ENTERED AT 12:10:42 ON 24 OCT 2005
L4           1 SEA ABB=ON  PLU=ON  US2003040030/PN OR (US2002-857433# OR
               GB2000-8784# OR WO2001-GB1615#)/AP,PRN

     FILE 'REGISTRY' ENTERED AT 12:24:50 ON 24 OCT 2005
L5           1 SEA ABB=ON  PLU=ON  L3 AND 6027-13-0
L6         264 SEA ABB=ON  PLU=ON  C4H9NO2S
L7             QUE ABB=ON  PLU=ON  (PMS OR MAN OR IDS)/CI OR UNSPECIFIED OR
               COMPD OR COMPOUND OR (D OR T)/ELS
L8         219 SEA ABB=ON  PLU=ON  L6 NOT L7
L9          27 SEA ABB=ON  PLU=ON  L8 AND HOMOCYSTEIN?
L10         26 SEA ABB=ON  PLU=ON  L9 NOT (MXS/CI OR MIXT)
L11          1 SEA ABB=ON  PLU=ON  L3 AND 9024-41-3
L12          7 SEA ABB=ON  PLU=ON  (HOMOCYSTEINASE? OR "E.C.4.4.1.2" OR
               "E.C.4.4.1.2" OR ("E.C." OR EC OR ENZYME? (W)COMMISS?)(W)4
               (W)4(W)1(W)2)/CNS
L13         13 SEA ABB=ON  PLU=ON  (DESULFHYDRASE OR DESULPHHYDRASE) (1A)HOMOC
               YSTEIN?
L14         18 SEA ABB=ON  PLU=ON  (L12 OR L13)

     FILE 'HCAPLUS' ENTERED AT 13:00:30 ON 24 OCT 2005
L15       6345 SEA ABB=ON  PLU=ON  L10
L16      10356 SEA ABB=ON  PLU=ON  HOMOCYSTEINE# OR (BUTYRIC OR BUTANOIC)
               (1A)ACID (1A)(2 OR 3) (1A)AMINO (1A)4 (1A)MERCAPTO OR (2 OR
               3)(1A)AMINO(1A)(MERCAPTOBUTYRIC OR MERCAPTOBUTANOIC)(1A)ACID?
               OR NSC43117 OR NSC43(1A)117 OR NSC206252 OR NSC206(1A)252
L17          0 SEA ABB=ON  PLU=ON  NSC (1A)(43117 OR 43(1A)117 OR 206252 OR
               206(1A)252)
L18        606 SEA ABB=ON  PLU=ON  (L15 OR L16 OR L17)(L)ANT/RL
L19         48 SEA ABB=ON  PLU=ON  L14
L20        182 SEA ABB=ON  PLU=ON  (DESULFHYDRASE OR DESULPHHYDRASE) (1A)?HOMO
               CYSTEIN? OR LYASE (2A)METHIONINE OR RIBOSYLHOMOCYSTEINASE?
               D QUE L12
L21         29 SEA ABB=ON  PLU=ON  HOMOCYSTEINASE? OR "E.C.4.4.1.2" OR
               "E.C.4.4.1.2" OR ("E.C." OR EC OR ENZYME? (W)COMMISS?)(W)4
               (W)4(W)1(W)2
L22         25 SEA ABB=ON  PLU=ON  L18 AND (L19 OR L20 OR L21)
               E CONNELLY C/AU
L23         35 SEA ABB=ON  PLU=ON  ("CONNELLY C"/AU OR "CONNELLY C A"/AU OR
               "CONNELLY C C"/AU OR "CONNELLY C D"/AU OR "CONNELLY C J"/AU OR
               "CONNELLY C L"/AU OR "CONNELLY C M"/AU OR "CONNELLY C S"/AU OR
               "CONNELLY CAROLINE A"/AU OR "CONNELLY CAROLYN"/AU OR "CONNELLY
               CAROLYN M"/AU)
               E BRADY J/AU
L24        173 SEA ABB=ON  PLU=ON  ("BRADY J"/AU OR "BRADY J A"/AU OR "BRADY
               J B"/AU OR "BRADY J C"/AU OR "BRADY J D"/AU OR "BRADY J E"/AU
               OR "BRADY J F"/AU OR "BRADY J G"/AU OR "BRADY J H"/AU OR
               "BRADY J J"/AU OR "BRADY J L"/AU OR "BRADY J M"/AU OR "BRADY J
               N"/AU OR "BRADY J P"/AU OR "BRADY J R"/AU OR "BRADY J T"/AU OR
               "BRADY J V"/AU OR "BRADY J W"/AU)
               E BRADY JEFF/AU
L25         16 SEA ABB=ON  PLU=ON  ("BRADY JEFF"/AU OR "BRADY JEFF A"/AU OR
               "BRADY JEFF C"/AU OR "BRADY JEFFERSON E"/AU OR "BRADY JEFFREY
               D"/AU OR "BRADY JEFFRY L"/AU)
               E AXIS S/AU
               E AXIS-S/AU
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                E AXIS-S/CS,PA
                E AXIS S/CS,PA
L26          27 SEA ABB=ON  PLU=ON  ("AXIS S"/CS OR "AXIS S"/PA OR "AXIS S P
                A"/CS OR "AXIS S P A"/PA OR "AXIS S P A ITALY"/CS OR "AXIS S P
                A ITALY"/PA OR "AXIS SHIELD ASA"/CS OR "AXIS SHIELD ASA"/PA OR
                "AXIS SHIELD ASA NORWAY"/CS OR "AXIS SHIELD ASA NORWAY"/PA OR
                "AXIS SHIELD ASA OSLO N 0510 NORWAY"/CS OR "AXIS SHIELD ASA
                OSLO NORWAY"/CS OR "AXIS SHIELD ASA UK"/CS OR "AXIS SHIELD ASA
                UK"/PA OR "AXIS SHIELD DIAGNOSTICS LIMITED"/CS OR "AXIS SHIELD
                DIAGNOSTICS LIMITED"/PA OR "AXIS SHIELD DIAGNOSTICS LIMITED
                DUNDEE UK"/CS OR "AXIS SHIELD DIAGNOSTICS LIMITED UK"/CS OR
                "AXIS SHIELD DIAGNOSTICS LIMITED UK"/PA OR "AXIS SHIELD
                DIAGNOSTICS LTD DUNDEE DD2 1XA UK"/CS OR "AXIS SHIELD POC
                AS"/CS OR "AXIS SHIELD POC AS"/PA OR "AXIS SHIELD POC AS
                NORWAY"/CS OR "AXIS SHIELD POC AS NORWAY"/PA OR "AXIS SHIELF
                ASA"/CS OR "AXIS SHIELF ASA"/PA OR "AXIS SHIELF ASA NORWAY"/CS
                OR "AXIS SHIELF ASA NORWAY"/PA)
L27           2 SEA ABB=ON  PLU=ON  L22 AND (L23 OR L24 OR L25 OR L26)
L28          23 SEA ABB=ON  PLU=ON  L22 NOT L27
L29           9 SEA ABB=ON  PLU=ON  L28 AND BODY FLUID+OLD,NT/CT

     FILE 'REGISTRY' ENTERED AT 13:15:52 ON 24 OCT 2005
L30           1 SEA ABB=ON  PLU=ON  42616-25-1

     FILE 'HCAPLUS' ENTERED AT 13:16:12 ON 24 OCT 2005
L31           5 SEA ABB=ON  PLU=ON  L30 AND L18
L32           4 SEA ABB=ON  PLU=ON  BODY FLUID+OLD,NT/CT AND L31
L33           5 SEA ABB=ON  PLU=ON  (L31 OR L32)
L34          11 SEA ABB=ON  PLU=ON  (L29 OR L33)
L35           0 SEA ABB=ON  PLU=ON  L34 AND (L23 OR L24 OR L25 OR L26)
L36           9 SEA ABB=ON  PLU=ON  L34 AND (PY<=2000 OR AY<=2000 OR PRY<=2000)
L37          11 SEA ABB=ON  PLU=ON  (L34 OR L36)

=> b home
FILE 'HOME' ENTERED AT 13:20:28 ON 24 OCT 2005
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